

# STIC Search Report

# STIC Dalabase Tracking Municipe

TO: Nita M Minnifield

Location: REM/3C01/3C18

**Art Unit: 1645** 

Saturday, September 03, 2005

Case Serial Number: 10/789536

From: Mary Jane Ruhl

**Location: Biotech-Chem Library** 

Remsen 1-A-62

Phone: 571-272-2524

maryjane.ruhl@uspto.gov

### Search Notes

Examiner Minnifield,

Here are the results for your recent search request.

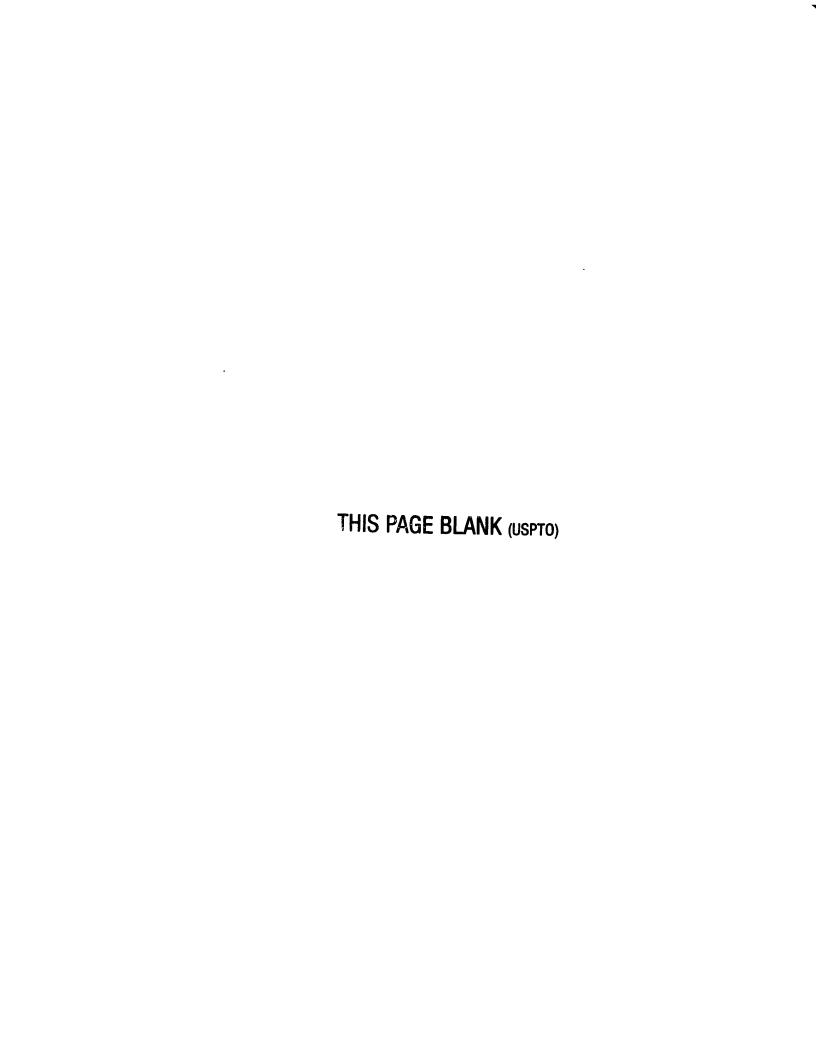
Please feel free to contact me if you have any questions about these results.

Thank you for using STIC services. We appreciate the opportunity to serve you.

Sincerely,

Mary Jane Ruhl Technical Information Specialist STIC Remsen 1-A-62 Ext. 22524





### STIC-Biotech/ChemLib

163642

From: Sent: Minnifield, Nita

Wednesday, August 24, 2005 12:36 PM

To: Subject: STIC-Biotech/ChemLib interference search request

10/789536

## STIC

Please do an interference sequence search on SEQ ID NO: 1 and 6 of this application.

Please show first 30 results/alignments.

Please provide a paper copy of all results.

Thanks, Minnifield, 71976 Art Unit 1645 Office REM-3C01 Mailbox REM-3C18 571-272-0860

STAFF USE ONLY

Searcher:
Searcher Phone: 2Date Searcher Picked up:
Date Completed:
Searcher Prep/Rev. Time:
Online Time:

Type of Search

| NA#:           | AA#:        |  |  |  |  |  |
|----------------|-------------|--|--|--|--|--|
| Interference   | : SPDI:     |  |  |  |  |  |
| S/L:           | Oligomer:   |  |  |  |  |  |
| Encode/Transl: |             |  |  |  |  |  |
| Structure#:    | Text:       |  |  |  |  |  |
| Inventor:      | Litigation: |  |  |  |  |  |

Vendors and cost where applicable STN:\_\_\_\_\_\_
DIALOG:\_\_\_\_
QUESTEL/ORBIT:\_\_\_\_\_
LEXIS/NEXIS:\_\_\_\_\_

LEXIS/NEXIS:
SEQUENCE SYSTEM:
WWW/Internet:
Other(Specify):

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Aaa90449 CpG adjuv Aah5059 Immune re Aah19265 Oh190nucl re Aah19265 Oh190nucl re Aah19265 Oh190nucl re Aah19265 Oh190nucl re Aaf9873 Immunogen Aaf9956 Immunosti Aaf9956 Immunosti Aaf9976 Immunosti Aaf9976 Immunosti Aaf9976 Immunosti Aaf9976 Immunosti Aaf9976 Immunosti Aaf9978 Immunosti Aas9231 CG motife Abs7848 Anglogene Abs7848 Anglogene Abs7848 Anglogene Abs7848 Anglogene Abs7848 Anglogene Abs7848 Orgene Abs7863 Immunosti Abs7863 Immunosti Abs7863 Immunosti Abs786163 Immunosti Abs7861 Immunosti Abs7861 Immunosti Abs7861 Immunosti Abs7861 Immunosti Abs7861 Immunosti Abs7861 Immunosti Abs7865 Immunosti Abs7865 Immunosti Abs7865 Immunosti

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ALIGNMENTS
ACA62352
ADR44719
ABL58978
ADC87010
ABT19577
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ADC04739
ADC29904
ADR29904
ABC99128
ABC99198
ADB37300
ACH03322
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Aav27677 Immunosti
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Aac801359 B-cell st
Ac801359 B-cell st
Ac8058881 Mitogenic
Ad36588 Infogenic
Ad36588 Conte
Ad3658 B-cell st
Ad220014 B-cell st
Ad75001 CpG-conte
Ad75002 CpG oilgo
Ad75002 CpG oilgo
Ad78602 CpG oilgo
Ad788228 CpG immun
Ad817223 ODN1, oll
Ac862351 Lymphocyt
Aav16894 Immunocyt
Aav47684 Unmethyla
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                                    1; Search time 382.286 Seconds (without alignments)
309.702 Million cell updates/sec
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      GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                       hits satisfying chosen parameters:
                                                                                             4390206 seqs, 2959870667 residues
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Listing first 90 summaries
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ADQ36584
ADR20014
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ADR45002
ADR88228
ADS17223
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AAZ48834
AAD02961
ACD91359
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Post-processing:

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Run on:

Scoring table:

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Ade73531 tcp gene Aaq33294 Korean he Aav52539 Unmethyla Aaz41898 IL-12 sec

18.4 18.4 18.4 19.4

Result No.

Adc87010 Human GPC Abt19577 Aspergill

us-10-789-536-1.rng

B cell; stimulant; immune response; B cell activation; cancer; vaccine; immunostimulatory molecule; infection; therapy; 88.

B-cell stimulating oligonucleotide, ODN1585.

24-MAR-2000 (first entry)

AAZ48834;

/\*tag= a /note= "phosphorothioate backbone"

16. .20 \*tag= note=

modified\_base

95US-00386063 94US-00276358 FOUND.

07-FEB-1995; 15-JUL-1994;

US6008200-A. 28-DEC-1999 (IOWA ) UNIV IOWA RES

WPI; 2000-086224/07.

Krieg AM;

a "phosphorothioate backbone"

Location/Qualifiers

modified base

Synthetic

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AAV27641-751 represent immunostimulatory oligodecxyribonucleotides (ODNs) cof the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: 5' NIXICGX2N2 3', where at least one uncleotide separates consecutive CpGs, XI is adenine, guanine, or thymine, X2 is cytosine or thymine, N is any nucleotide and NI+N2 is 0-26 bases with the provision that NI and N2 does not contain a CCGG tetramer CC or more than one CGG or CGG trimer OR 5' NIXICACGX3X4N 3', where at least cone nucleotide separates consecutive CpGs, XI and X2 are selected from GpT, GpG, GpA, ApT and ApA, X3and X4 are selected from TpT or CpT, N is any nucleotide and NI+N2 is 0.26 bases with the provision that NI and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer. The CODNs activate lymphocytes in a subject and redirect a subject's immune colons from a Th2 to a Th1 (e.g. by inducing monocytic cells and other CC cells to produce Th1 cytokines, including IL-12, IFN agamma and GM-CSF). The ODNs can be used to treat or prevent an asthmatic disorder, a dijuvant during antibody generation in a mammal such as a mouse or a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections
                                                                                                                                                                                                   Immunostimulatory; oligodeoxyribonucleotide; ODN;
unmethylated CpG dinucleotide; activate; lymphocyte; immune response;
Th2; Th1; cytokine; treatment; prevention; asthma; autoimmune disease;
desensitisation therapy; artificial adjuvant; antibody generation; ss.
                                                                                                                                                           Immunostimulatory oligodeoxyribonucleotide of the invention.
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Best Local Similarity 100.0%; Pred. No. 2.4;
Matches 20; Conservative 0; Mismatches 0. Train
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 25; 109pp; English
                                       AAV27677 standard; DNA; 20 BP.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96US-00738652
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                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Krieg AM, Kline JN;
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                                                                                                                       01-OCT-1998
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                                                                             AAV27677;
RESULT 1
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This sequence represents a B cell stimulatory oligonucleotide. The invention relates to compositions comprising an oligonucleotide (I) with unmethylated guanine and cytosine nucleotides and an antigen in a carrier. The oligonucleotides can be administered to a subject in a carrier. The oligonucleotides are immunostimulatory cand can be used to treat, prevent or ameliorate an immune system can be used to treat, prevent or ameliorate an immune system deficiency e.g. cancer or a viral, fungal, bacterial or parasitic infection. They can also be administered as a vaccine adjuvant to stimulate the response of a host to a vaccine. The compositions can be used to treat humans or vertebrate animals including dogs, cate, sheep pigs, cows, goats, chickens, mice and monkeys. Preceding chemotherapy content animal should be useful for increasing the responsiveness of malignant cells to subsequent chemotherapy. The 8.40 nucleotide size of the oligonucleotides
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunostimulatory oligonucleotides which enhance B cell activation useful for treating an immune system deficiency e.g. cancer.
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ses 20; Conservative
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Gaps .

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8

AAZ48834 standard; DNA; 20 BP.

AAZ48834 ID AAZ4 XX RESULT 2

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The invention relates to treating a subject infected with HIV comprising administering a CpG nucleic acid (e.g. an adjuvant type CpG oligonucleotide, an immunostimulatory CpG oligonucleotide or a B cell stimulatory CpG oligonucleotide). The CpG are used as gene therapy vaccines to treat a subject infected with HIV. The present sequence is a B-cell stimulatory CpG oligonucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Treating a subject infected with HIV by administering a CpG nucleic acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immunostimulatory oligonucleotide; unmethylated CpG dinucleotide; immunoinhibitory oligonucleotide; cellular transcription factor; viral activity; lymphocyte activation; B cell; natural killer cell; NK; immune system deficiency; viral infection; immune disease; SLE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  systemic lupus erythematosus; sepsis; cancer; immunomodulatory; immunostimulant; dermatological; antiinflammatory; cytostatic; antibacterial; virucide; ss.
                                                                    infection; gene therapy; vaccine; B-cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 20; DB 9; Length 20; 100.0%; Pred. No. 2.4;
                                 B-cell stimulatory, CpG containing oligonucleotide #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
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95US-00386063.
99US-00415142.
                                                                                                                                                                                                                                                        16-AUG-2001; 2001US-00931583
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                                                                                             immunostimulatory; adjuvant
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22-SEP-2003 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                 Krieg AM, Klinman D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-512356/48.
                                                                            SB; HIV
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Best Local Similarity
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07-FEB-1995;
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                                                                                                                                                                                                                  13-MAR-2003
                                                                            CpG island;
                                                                                                                                      Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to immunomodulatory oligodecxyribonucleotides (ODNs) containing methylated or unmethylated cytosine-guanine (CpG) dinucleotides. Immunostimulatory ODN compositions having unmethylated CpG dinucleotides are useful for activating lymphocytes and for treating, preventing or ameliorating an immune system deficiency e.g. tumour or cancer or viral, fungal, bacterial or parasitic infection and leukaemia. Neural ODN that contains a methylated CpG dinucleotide are useful for treating diseases such as systemic lupus erythematosus, sepsis and autoimmune diseases. Immunoinhibitory ODN containing CpG dinucleotides that are not in the stimulatory motif and GCG trinucleotide sequences at or near both termini have antiviral activity. The present sequence is an immunostimulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Immunostimulatory composition useful for stimulating immune response in a subject, comprises antigen and immunostimulatory nucleic acid comprising oligonucleotides having unmethylated cytosine-guanine dinucleotides.
                                     oligodeoxyribonucleotide; ODN; cytosine-guanine dinucleotide; CpG; immunostimulatory; therapy; immune system deficiency; tumour; cancer; antibacterial; antiparasitic; fungicide; antiviral; cytostatic; leukaemia; systemic lupus erythematosus; sepsis; autoimmune disease; immunoinhibitory; ss.
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                      Immunostimulatory oligodeoxyribonucleotide (ODN) 1585.
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                                                                                                                                                                                                                                                                              /mod_base= OTHER
/note= "Phosphorothioate backbone"
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/note= "Phosphorothioate backbone"
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                                                                                                                                                                                                                     Location/Qualifiers
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Krieg AM,

US6194388-B1 27-FEB-2001

Synthetic

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Gaps

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Indels

0

99US-00415142

08-OCT-1999;

ACD91359

RESULT 4 ACD91359

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us-10-789-536-1.rng

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The present invention relates to immunostimulatory oligonucleotides containing at least one unmethylated CpG dinucleotide, and financianibitory oligonucleotides which are capable of interfering with the activity of viral or cellular transcription factors. The immunostimilatory oligonucleotides are useful for activating a subject's lymphocytes (B cells or natural killer (NK) cells). They are useful for treating a subject or reating, preventing or ameliorating an immune system deficiency. The immunoinhibitory oligonucleotides are useful for treating or preventing or a subject. They are also useful for treating or preventing or preventing an immune system deficiency in a subject. The immunoinhibitory oligonucleotides can be used in a pharmaceutical composition which may be used for vaccinating a subject. The composition which may be used for treating an immune disease such as systemic lupus exthematosus (SLB), sepsis, or cancer. The conjouncleotides are safe to use since they do not initiate an immune constitution of the configuration of the conf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  reaction when administered to a subject in vivo. ACA62324-ACA62352 represent the immunomodulatory oligonucleotides of the invention. Note: The present sequence given as SEQ ID No:1 in the Sequence listing differs from that given on page 6 (ACA62351) and page 17 (ACA62352) of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lymphocyte; B cell; natural killer cell; immune response; systemic lupus erythematosus; sepsis; viral infection; immunosuppressive; immunostimulating; antibacterial; antiinflammatory; dermatoological; virucide; phosphorothioate backbone; se.
                                                                                                                                                                                                           Novel immunostimulatory oligonucleotide comprising 2-100 nucleotides and containing at least one unmethylated CpG dinucleotide, useful for activating a subject's B cells or natural killer cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
100.0%; Score 20; DB 9; Length 20;
Best Local Similarity 100.0%; Pred. No. 2.4;
Matches 20; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \frac{1}{1000} mote = "Phosphorothioate backbone"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mod_base= CTHER
/note= "Phosphorothioate backbone"
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                                                                                                                                                                                                                                                                                                                            Disclosure; Page 13; 19pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GGGGTCAACGTTCAGGGGGG 20
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95US-00386063.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADO58881 standard; DNA; 20
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                                                                                                                                                        WPI; 2003-466135/44.
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modified_base
                                                (KRIE/) KRIEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specification
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07-FEB-1995;
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                                                                                                        Krieg AM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B-cell stimulation; CpG island; ss; viral transcription factor; cellular transcription factor; immunoinhibitor; immune system deficiency; systemic lupus erythematosus; sepsis; tumour; cancer; viral infection; fungal infection; bacterial infection; parasitic infection; vaccine;
                                                                                                                                                                                                                                                                         New immunomodulatory oligonucleotides containing at least one unmethylated CpG dinucleotide, useful for treating diseases including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 20; DB 12; Length 20; 100.0%; Pred. No. 2.4;
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/note= "Phophorothioate linkage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B-cell stimulatory CpG oligonucleotide ODN1585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                          US DEPT HEALTH & HUMAN SERVICES. COLEY PHARM GROUP INC.
                                                                                                                                                                                                                                                                                                       systemic lupus erythematosus and sepsis.
                                                                                                                                                                                       CPG IMMUNOPHARMACEUTICALS INC.
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/*tag= b
/note= "CpG island"
16. .20
                                                                                                                                                                                                                  Steinberg AD;
                                                                                                                                                                                                                                                                                                                                    Claim 5; SEQ ID NO 1; 19pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GGGGTCAACGTTCAGGGGGG 20
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                                                                                                 95US-00386063.
                                                        30-JUL-2003; 2003US-00631676.
                                                                                      94US-00276358
                                                                                                                                            (IOWA ) UNIV IOWA RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADQ36558 standard; DNA; 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antisense gene therapy
                                                                                                                                                                                                                  Krieg AM, Klinman D,
                                                                                                                                                                                                                                                 WPI; 2004-356245/33.
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Matches 20; Conserv
US2004087534-A1.
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08-OCT-1999;
                                                                                   15-JUL-1994;
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                            06-MAY-2004
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                                                                                                                                                                                       (CPGI-)
                                                                                                                                                                         (COLE-)
                                                                                                                                                             (USSH
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The invention relates to a new oligonucleotide which: (a) comprises about

2-100 nucleotides and containing at least one unmethylated CpG

dinucleotide; or (b) is capable of interfering with the activity of viral

or cellular transcription factors and containing a consensus

immunolabilitor CpG motif represented by the formula (I): 5'GCGXnGCG3'

where X a nucleotide and n 0-50. Also included are an oligonucleotide

delivery complex (comprising the oligonucleotide, and a targeting means),

a pharmaceutical composition comprising the oligonucleotide and a

pharmaceutical carrier, activating a subject's B cells or natural killer

cells (by contacting the cells with the oligonucleotide and a

vaccinating a subject by administering the composition in conjunction

with a vaccine, treating a disease associated with an immune system

activation in a subject (by administering neutral oligonucleotide alone

cor in conjunction with a pharmaceutical carrier), an improved

method for in vivo diagnoses using oligonucleotide probes comprising

coligonucleotides prior to administration to a subject by

subject and treating or preventing or preventing or ameliorating an

cuthout the immunoinhibitory oligonucleotide defined above. The

colligonucleotide is useful for treating, preventing or ameliorating an

constitution in the immunoinhibitory oligonucleotide defined above. The

colligonucleotide is useful for treating, preventing or ameliorating an

constitution of the immunoinhibitory oligonucleotide privaticing in a

continue system deficiency, such as systemic lupus erythematosus, sepsis,

containing antial, the oligonucleotide privaticing in a

containing antial, the oligonucleotide and a pravating or

containing antial, the oligonucleotide and treating and a preventing or parasitic infection in a

containing antial, and a preventing or parasitic infection and a proper and a preventing and a proper and a prop
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New oligonucleotides containing unmethylated CpG dinucleotide, useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tumour, cancer, or viral, fungal, bacterial or parasitic infection.
Compositions comprising the oligonucleotide are useful for activating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  treating, preventing or ameliorating an immune system deficiency, e.g. tumor, cancer, or viral, fungal, bacterial or parasitic infection.
                                               /note= "Phophorothioate linkage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5; SEQ ID NO 1; 14pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Steinberg AD;
/*tag= c
/mod_base= OTHER
                                                                                                                                                                                                                                                                94US-00276358.
95US-00386063.
99US-00415142.
                                                                                                                                                                                                              21-OCT-2003; 2003US-00690495
                                                                                                                                                                                                                                                                                                                                                                     (KLIN/) KLINMAN D.
(STEI/) STEINBERG A D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Klinman D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2004-552597/53.
                                                                                                       JS2004143112-A1
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07-FEB-1995;
08-OCT-1999;
                                                                                                                                                            22-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Krieg AM,
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Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;

-cell stimulatory CpG oligonucleotide of the invention.

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Gaps
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Score 20; DB 12; Length 20;
Pred. No. 2.4;
                  Indels
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0
                  Mismatches
                                     1 GGGGTCAACGTTCAGGGGG 20
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100.0%;
        Local Similarity 100.
  Query Match
             Best Loc
Matches
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Gape ö

100.0%; Score 20; DB 12; Length 20; 100.0%; Pred. No. 2.4; cive 0; Mismatches 0; Indels

Query Match
Best Local Similarity 100.

Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other; malignant cells to subsequent chemotherapy. Thi unmethylated CpG dinucleotide of the invention.

This sequence represents an

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The invention relates to oligonucleotides containing at least one cummethylated CpG dinucleotide. The invention relates to an oligonucleotide delivery complex comprising an oligonucleotide of the invention and a targeting means, a method of activating a subject's B cells or natural killer cells by contacting the cells with an coligonucleotide, a method of treating, preventing or ameliorating an aubject by administering the composition in conjunction with a vaccine, a method of treating a disease associated with an immune system activation in a subject by administering a neutral oligonucleotide alone or in conjunction with a pharmaceutical carrier, and a method of performing conjunction with a pharmaceutical carrier, and a method of performing cantisense therapy comprising methylating CpG containing oligonucleotides or treating diseases associated with immune system activation, such as prior to administration to a subject. The oligonucleotides are useful for treating diseases associated with immune system activating a subject's B cells or natural killer cells, for treating, preventing a subject's C an immune system deficiency or for vaccinating a subject. The remaining or preventing a immunoinhibitory oligonucleotides are useful for treating or preventing a viral infection in a subject. The oligonucleotides may also be used in conjunction with a vaccine to boost a subject is mmune the remanned from the remanned 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New oligonuclectides containing unmethylated CpG dinuclectide, useful for activating a subject's B cells or natural killer cells, as vaccine, or for treating, preventing or ameliorating an immune system deficiency.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   better response from the vaccine, or for increasing the responsiveness of
                                                                                                                                                                                                                                                                   immune system deficiency; immune system activation; systemic lupus erythematosus; sepsis; viral infection; chemotherapy; cytostatic; virucide; fungicide; antibacterial; antiparasitic; immunosuppressive; antiinflammatory; dermatological; ss.
                                                                                                                                                                                                                                             Unmethylated CpG dinucleotide; B cell; natural killer cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Steinberg AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 5; SEQ ID NO 1; 14pp; English
                                                                                                                                                                                                   Unmethylated CpG dinucleotide #1.
                                             ADQ36584 standard; DNA; 20 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495
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                                                                                                                                                07-OCT-2004 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic.
                                                                                                  ADQ36584;
RESULT 8
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US2004152657-A1
                                                                                                                                            the invention
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc feature
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08-OCT-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                     ADR28877;
                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vaccine.
                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                       RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New oligonucleotide comprises at least one unmethylated CpG dinucleotide, useful for stimulating an immune response or for treating diseases associated with immune system activation, e.g. systemic lupus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention describes novel oligonucleotides capable of interfering with the activity of viral or cellular transcription factors and containing a consensus immunoinhibitory CpG motif having the formula: 5'GCGMGCG3', where X is a mucleotide and n is 0-50 and a phosphorothioate backbone modification. The invention also describes an oligonucleotide delivery complex comprising the oligonucleotide and a targeting means e.g. a pharmaceutical carrier. The oligonucleotide and a targeting means e.g. a pharmaceutical carrier. The oligonucleotides are used for activating a subject's B cells or natural killer cells; treating, preventing or ameliorating an immune system deficiency in a subject; treating a disease associated with an immune system activation in a subject (systemic lupus erythematosus or sepsis); performing antisense therapy comprising methylating CpG
                                                                                                                                                                                                                                                                        phosphorothioate backbone; B cell activation; anatural Killer cell activation; immune system deficiency; systemic lupus erythematosus; antisense; methylation; antiinflammatory; dermatological; immunosuppressive; virucide; ss;
                                                                                                                                                                                                                                                         cellular transcription factor; immunoinhibitory; CpG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "phosphorothioate linkage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "phosphorothioate linkage"
16. .20
                                                                                                                                                                                                                           B-cell stimulating oligonucleotide ODN 1585.
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(COLE-) COLEY PHARM GROUP INC.
(USSH ) US SEC HEALTH AND HUMAN SERVICES.
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                                             GGGGTCAACGTTCAGGGGGG 20
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07-FEB-1995; 95US-00386063.
08-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495.
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modified_base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified base
                                                                                                                                                                                           21-OCT-2004
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                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                             ADR20014;
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containing oligonucleotides prior to administration to a subject; an improved method for in vivo diagnoses using oligonucleotide probes comprising methylaring CPG containing oligonucleotides prior to administration to a subject; and treating or preventing a viral infection in a subject. The targeting means is selected from cholesterol, virosome, liposome, lipid, or a target cell specific binding agent. The oligonucleotides described in the invention have antiinflammatory, dermatological, immunosuppressive and virucide activity. ADR20014-ADR20040 represent the oligonucleotides describes in the disclosure of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New oligonucleotide comprises at least one unmethylated CpG dinucleotide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ss; immunostimulatory oligonucleotide; CpG dinucleotide; transcription factor; immunoinhibitory CpG motif; B cell; natural killer cell; immune system deficiency; antisense therapy; viral infection; immune response; systemic lupus erythematosus; sepsis; viral infection; immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 20; DB 13; Length 20; 100.0%; Pred. No. 2.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CpG-containing immunostimulatory oligonucleotide ODN 1585.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                             Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
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/note= "Phosphorothioate linkage"
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/note= "Phosphorothioate linkage"
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                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
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/note= "CpG dinucleotide"
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(COLE-) COLEY PHARM GROUP INC.
(USSH ) US SEC HEALTH AND HUMAN SERVICES.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGGTCAACGTTCAGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GGGTCAACGTTCAGGGGGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADR28877 standard; DNA; 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-OCT-2004 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2004-624264/60.
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                                                                                            The invention relates to an oligonucleotide comprising 2-100 nucleotides and containing at least one unmethylated CpG dinucleotide. The coligonucleotide is capable of interfering with the activity of viral or cellular transcription factors and containing a consensus colligonucleotide and niso-50. Also included are an oligonucleotide delivery complex (comprising the oligonucleotide above and a targeting means), a complex (comprising the oligonucleotide above and a targeting means), a pharmaceutical carrier), activating a subject's B cells, activating a cubject's complex (comprising the oligonucleotide above and a performance associated with an immune system activation in a subject, treating of gesage associated with an immune system activation in a subject, treating or oligonucleotides prior to administration to a subject in vivo diagnoses oligonucleotides prior to administration to a subject and treating or preventing a viral infection in a subject. The oligonucleotide is associated with immune system activation including or treating diseases associated with immune system activation including systemic lupus erythematosus or sepsis, or for treating, preventing, or treating diseases associated with immune system activation including systemic lupus erythematosus or sepsis, or for treating or preventing, or cligonucleotide is also useful for treating or preventing or immune system deficiency in a subject. The cligonucleotide is also useful for treating or preventing, or immune system deficiency in a subject of the invention. It is also useful for treating or preventing or immune system climent in the present sequence is an immune for immune system climent in the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     systemic lupus erythematosus; sepsis; tumour; cancer; viral infection; bacterial infection; fungal infection; cytostatic; virucidal; antibacterial; fungicidal; antiinflammatory; dermatological; immunosuppressive; vaccine; gene therapy; phosphorothioate backbone; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
useful for stimulating an immune response or for treating diseases associated with immune system activation, e.g. systemic lupus erythematosus or sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mitogenic CpG oligonucleotide ODN1585 used in B-cell activation.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 20; DB 13; Length 20;
Pred. No. 2.4;
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/note= "Phosphorothioate backbone"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seguence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Scc.
100.0%; Pred. No. ...
0; Mismatches
                                                                     Claim 5; SEQ ID NO 1; 19pp; English
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/mod_base= OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGGGTCAACGTTCAGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADR44692 standard; DNA; 20 BP
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Best Local Similarity 100.
Matches 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .20
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The present invention provides oligonucleotides comprising immunomodulatory unmethylated CpG dinucleotide. The invention is useful for treating, preventing and ameliorating immune system deficiencies such as systemic lupus erythematosus and sepsis, tumour, cancer, viral, bacterial and fungal infections. The invention acts as an cytostatic, virucidal, antibacterial, fungicidal, antibinflammatory, dematological and immunosuppressive agent. The invention is also useful in the production of vaccines and in gene therapy. The present sequence is a mitogenic CpG oligonucleotide used in B-cell activation. Note: This sequence is stated to be SEQ ID No: 1 in the sequence listing. However, this sequence differs from the sequence designated as SEQ ID No: 1 in the
                                                                                                                                                                                                                                                                                                             New oligonucleotide comprises at least one unmethylated CpG dinucleotide, useful for treating, preventing, or ameliorating an immune system deficiency or a tumor, cancer, viral, bacterial, or fungal infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Immune response; immune system deficiency; tumour; cancer;
viral infection; systemic lupus erythematosus; sepsis; vaccine;
gene therapy; bacterial infection; fungal infection; phosphorothloate;
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Pred. No. 2.4;
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/note= "Phosphorothioate nucleotides"
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/note= "Phosphorothioate nucleotides"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
                                                                                                                                             (IOWA ) UNIV IOWA RES FOUND.
(COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure, SEQ ID NO 1; 20pp; English
                                                                                                                                                                                                                              Steinberg AD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGGTCAACGTTCAGGGGGG 20
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                                       15-JUL-1994; 94US-00276358.
07-FEB-1995; 95US-00386063.
08-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495.
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30-JAN-2004; 2004US-00769626
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                                                                                                                                                                                                                                 Krieg AM, Klinman D,
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modified base
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                                                                                            15-JUL-1994; 94US-00276358.
07-FEB-1995; 95US-00386663.
09-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495.
                                                               26-FEB-2004; 2004US-00787737.
                                                                                                                                                                            (IOWA ) UNIV IOWA RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADS17223 standard; DNA; 20
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/*tag= a
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                                                                                                                                                                                                                                                                          WPI; 2004-634548/61.
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 US2004171150-A1
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modified_base
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                                 02-SEP-2004
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                 The invention provides novel oligonucleotides containing unmethylated CpG dinucleotides and therapeutic utilities based on their ability to estimulate an immune response in a subject. Oligonucleotides of the invention are useful for treating, preventing or ameliorating an immune system deficiency or a tumour, cancer, viral, bacterial or fungal infection. They are useful for treating diseases associated with immune system activation including systemic lupus erythematosus or sepsis. They are also useful as vaccines to boost subject's immune system. The invention is also useful in gene therapy. The present sequence is a CpG oligonucleotide used to stimulate B-cells. Note: This sequence is stated to be the same as that shown as SEQ ID NO: 1 in page 18 of the specification. However these sequences differ.
                                                                                                                                                                                                                                                                                                          New oligonucleotide comprises at least one unmethylated CpG dinucleotide,
                                                                                                                                                                                                                                                                                                                         useful for treating, preventing, or ameliorating an immune system deficiency or a tumor, cancer, viral, bacterial, or fungal infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CpG dinucleotide, gene therapy a, vaccine, cancer; viral infection, fungal infection, bacterial infection, parasitic infection, systemic lupus erythematosus; sepsis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CpG immunomodulatory oligo, ODN 1585 used in B cell stimulation.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 20 BP; 3 A; 3 C; 11 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                          (COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                          Steinberg AD;
                                                                                                                                                                                                                                                                                                                                                                        Claim 5; SEQ ID NO 1; 19pp; English.
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1 Similarity 100.0%; P:
20; Conservative 0;
                                                                                            15-JUL-1994; 94US-00276358.
07-FRB-1995; 95US-00386063.
08-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495.
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                                                               26-FEB-2004; 2004US-00789353
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/*tag=
                                                                                                                                                                                                                                          Klinman D,
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Best Local Similarity
US2004162262-A1
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modified_base
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                               19-AUG-2004
                                                                                                                                                                                                                                            Krieg AM,
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Matches
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New immunomodulatory oligonucleotides for preventing, treating or ameliorating diseases associated with immune system deficiency or activation, e.g. cancer, viral infection, systemic lupus erythematosus or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to an oligonucleotide containing at least one unmethylated CpG dinucleotide. The invention is useful in gene therapy and for preparing vaccine. The invention is also useful for preventing, treating or ameliorating diseases associated with immune system deficiency or activation such as cancer, viral, fungal, bacterial or parasitic infection, systemic lupus erythematosus or sepsis. The present sequence is a CpG immunomodulatory oligonucleotide used in B cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunomodulator; immune system; systemic lupus erythematosus; sepsis; viral infection; vaccine; B cell; virucide; phosphorothioate backbone;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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/note= "Phosphorothioate backbone"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
(COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                              Steinberg AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 5; SEQ ID NO 1; 19pp; English.
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containing at least one unmethylated CDG dinucleotide, and immunoinhibitory oligonucleotides which are capable of interfering with the activity of viral or cellular transcription factors. The activity of viral or cellular transcription factors. The cimmunostimluatory oligonucleotides are useful for activating a subject's immunostimluatory oligonucleotides are useful for activating a subject or treating, preventing or ameliorating an immune system deficiency. The immunoinhibitory oligonucleotides are useful for treating or preventing or useliorating an immune system deficiency. The cimmunoinhibitory oligonucleotides are useful for treating or preventing or preventing or ameliorating an immune system deficiency. The cimmunoinhibitory oligonucleotides can be used in a pharmaceutical composition which may be used for vaccinating a subject. The systemic lupus erythematosus (SLB), sepais, or cancer. The oligonucleotides may be used for treating on immune disease such as systemic lupus erythematosus (SLB), sepais, or cancer. The craction when administered to a subject in vivo. ACASC3224-ACASC322.

Treation when administered to a subject in vivo. ACASC3324-ACASC322.

The present the immunomodulatory oligonucleotides of the invention. Note: The present sequence given as SEQ ID No:1 on page 17 (ACASC3322) of the conciliants.
                                                                                                                                                                                                                                                                                                                                                                                                                Novel immunostimulatory oligonucleotide comprising 2-100 nucleotides and containing at least one unmethylated CpG dinucleotide, useful for activating a subject's B cells or natural killer cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Immunomodulatory oligonucleotide contg. unmethylated C-G dinucleotide.
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                    *tag= c note= "This base given as "O" (not defined) in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      present invention relates to immunostimulatory oligonucleotides
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 19; DB 9; Length 20; Pred. No. 7.7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 6; 19pp; English
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                                                                specification"
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95.0%;
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nes 19; Conservative
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misc_feature
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to immunomodulatory oligonucleotides containing an unmethylated CpG dinucleotide. The oligonucleotide of the invention is useful in preparing a composition for treating a disease associated with an immune system activation, e.g. systemic lupus erythematosus, sepsis or viral infection. It is also useful to prepare vaccine. The present sequence is an immunomodulatory oligonucleotide used to stimulate B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Immunostimulatory oligonucleotide; unmethylated CpG dinucleotide; immunoinhibitory oligonucleotide; cellular transcription factor; viral activity; lymphocyte activation; B cell; natural killer cell; NK; immune system deficiency; viral infection; immune disease; SLE; systemic lupus erythematosus; sepsis; cancer; immunomodulatory; immunostimulant; dermatological; antiinflammatory; cytostatic; antibacterial; virucide; phosphorothioate; ss.
                                                                                                                                                                                                                                                                                                                                                                                                New oligonucleotide comprising 2-100 nucleotides and containing an unmethylated CpG dinucleotide, useful in preparing a composition for treating a disease, e.g., systemic lupus erythematosus, sepsis or viral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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/note= "Phosphorothioate internucleotide linkages"
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Pred. No. 2.4;
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(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 5; SEQ ID NO 1; 19pp; English.
                                                                                                                                                                                                                                                                                                                Steinberg AD;
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Best Local Similarity 100.0%;
Matches 20; Conservative 0
                                                                                                              15-JUL-1994; 94US-00276158.
07-FEB-1995; 95US-00346063.
08-OCT-1999; 99US-00415142.
21-OCT-2003; 2003US-00690495.
                                                                     26-FEB-2004; 2004US-00788199
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                                                                                                                                                                                                                                                                                                                Krieg AM, Klinman D,
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modified_base
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This sequence represents an unmethylated CpG dinucleotide, and can be used in the method of the invention. The method is for treating a subject having, or at risk of having an acute decrement in air flow, comprising administering a nucleic acid sequence containing at least one unmethylated CpG. The nucleic acids containing an unmethylated CpG dinucleotide affect an immune response in a subject by activating natural killer cells (NK) or redirecting a subject's immune response from a Th2 to a Th1 response by inducing monocytic and other cells to produce Th1 cytokines. They can be used to treat pulmonary disorders having an immunologic component, such as asthma or environmentally induced airway disease. They can also be used to treat diseases associated with Grampositive bacterial infections or endotoxaemia including bacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections or autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAV27641-751 represent immunostimulatory oligodeoxyribonucleotides (ODNs) of the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: 5' NIXICGXZNZ 3', where at least one nucleotide separates consecutive (CpGs, XI is adenine, guanine, or thymine, X2 is cytosine or thymine, N is any nucleotide and N1+NZ is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer
                                                                                                                                                                                                                                       meningitis, neonatal sepsis, cystic fibrosis, inflammaTory bowel disease and liver cirrhosis, Gram-negative pneumonia, Gram-negative abdominal abscess, haemorrhagic shock, disseminated intravascular coagulation, or an inflammatory response to lipopolysaccharide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunostimulatory; oligodeoxyribonucleotide; ODN; unmethylated Cpg dinucleotide; activate; lymphocyte; immune response; 17h2; Th1; cytokine; treatment; prevention; asthma; autoimmune disease; desensitisation therapy; artificial adjuvant; antibody generation; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunostimulatory oligodeoxyribonucleotide of the invention.
                                                                                                                                                                                                                                                                                                                                                                 DB 2; Length 20;
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0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                 92.0%; Score 18.4;
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Claim 35; Page 27; 65pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
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                                                                                                                                                                                                                                                                                                                               AAT16894-T16898 are immunomodulatory oligonucleotides contg. at least one unmethylated C-G dinucleotide. The oligonucleotides can be used to activate B cells and natural killer cells. They can be used for treating, preventing or ameliorating an immune system deficiency, e.g. a tumour, cancer or a viral, fungal, bacterial or parasitic infection. They are also useful in stimulating a subject's response to a vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unmethylated CpG dinucleotide; immune response; bacterial meningitis; natural killer cell activation; NK cell; Th2 response; neonatal sepsis; pulmonary disorder; asthma; environmentally induced airway disease; bacterial infection; endotoxaemia; therapy; cystic fibrosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Use of nucleic acids containing an unmethylated CpG - for treating a subject having or at risk of having an acute decrement in air flow or inhibiting an inflammatory response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                            Immunomodulatory oligo:nucleotide(s) contg. an un-methylated CpG on nucleotide - used for stimulating activity or when methylated for
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 18.4; DB 2; Length 20; Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                        (IOWA ) UNIV IOWA STATE RES FOUND INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unmethylated CpG dinucleotide 1585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GGGGTCAACGTTCAGGGGG 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGTCAACGTTGAGGGGGG 20
                                                                                                                                                                                                                                                                                                Claim 5; Page 39; 45pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inflammatory bowel disease; ss.
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                                                    95WO-US001570
                                                                                      94US-00276358
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Best Local Similarity 95.0%;
Matches 19; Conservative
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                                                                                                                                                                                                                                                                inhibitory activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1998-480941/41.
                                                                                                                                                                                           WPI; 1996-105847/11.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9837919-A1
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                                                      07-FEB-1995;
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                                                                                      15-JUL-1994;
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                     01-FEB-1996
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or more than one CCG or CGG trimer OR 5' NXIX2CGX3X4N 3', where at least one nucleotide separates consecutive CpGs, X1 and X2 are selected from GpT, GpG, GpA, ApT and ApA, X3and X4 are selected from TpT or CpT, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer. The ODNs activate lymphocytes in a subject and redirect a subject's immune response from a Th2 to a Th1 (e.g. by inducing monocytic cells and other cells to produce Th1 cytokines, including IL-12, IFN-gamma and GM-CSF). The ODNs can be used to treat or prevent an asthmatic disorder, autoimmune diseases, in desensitisation therapy, as an artificial adjuvant during antibody generation in a mammal such as a mouse or a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18.4; DB 2; Length 20;
Pred. No. 15;
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                                                                                                                                                                                                                                                                                                                                                                                              Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGGGTCAACGTTCAGGGGGG 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAV74238 standard; DNA; 20 BP.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 92.0%;
Best Local Similarity 95.0%;
Matches 19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
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hepatitis B virus (HBV), bacterial antigens or an antigen derived from a parasite. They can also be used for expression of a therapeutic obyoperide, e.g. growth factors, toxins, tumour suppressors, cytokines, apoptotic proteins, interferons, hormones, clotting factors, ligands and receptors. (Updated on 20-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neutralising CpG and stimulating CpG motifs in DNA vectors - for ing the immunostimulatory effect of an antigen or enhancing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CpG-N motif; immunostimulation; antigen; CpG-S motif; immunisation; ODN viral antigen; bacterial antigen; parasite; therapeutic; growth factor; toxin; tumour suppressor; cytokine; apoptotic protein; interferon; hormone; clotting factor; ligand; receptor; oligodeoxynucleotide; ss.
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                                                                                                                                       Length 20;
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                                                                                                         Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                         DB 2;
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Pred. No. 15;
0; Mismatches
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(IOWA ) UNIV IOWA RES FOUND.
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                                                                                                                                             92.0%;
95.0%;
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                                                                                                                                                       Local Similarity
tes 19; Conserv
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20-MAY-1997;
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15-MAR-1999
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                                                                                                                                             Query Match
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Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;

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The invention relates to a microdroplet emulsion (microemulsion) with an adsorbent surface, and which comprises a metabolisable oil and an emotorbalitying agent (a detergent). It also relates to a composition comprising the microemulsion and a microparticle with an adsorbent surface, where the microparticle comprises a polymer selected from a polytothoester, a polyanhydride, and a polytyanoacrylate, and a second detergent. The surface of the microparticles efficiently adsorb biologically active macromolecules such as DNA, polypeptides, antigens, hormones, pharmaceutericals, enzymes, mediators of transcription or translation, metabolic intermediates and adjuvants. Additionally, a second biologically active molecule may be encapsulated within the microemulsion can be used in methods of immunising a host animal, particularly a human, against a viral, bacterial or the microemulsions the appropriate antigens adsorbed) may be particularly used as vaccines for hepartiss C virus (HRV), hepatitis B virus (HBV), herpes simplex virus (HSV), human immunodeficiency virus (HIV), cytomegalovirus (CMV), influenza virus, and rabies virus; the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Microemulsion having an adsorbent surface comprising a microdroplet emulsion consisting of a metabolizable oil and an emulsifying agent which is a detergent, useful as a vaccine to treat bacterial, viral, and
                                                                                                                                                                                                                                                                                                                                           CpG oligonucleotide; CpG motif; adjuvant; microdroplet emulsion; microemulsion; adsorbent micropaticle; vaccine; Phl immune response; viral infection; bacterial infection; parasitic infection; HGV; HBV; hepatitis C virus; hepatitis B virus; herpes simplex virus; HSV; HIV; human immunodeficiency virus; cytomegalovirus; CWV; influenza virus; rabies virus; cholerz; diphtharia; tetanus; pertussis; Helicobacter pylori; Haemophilus influenzae; malaria; ss.
                                        Gaps
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     Length 20;
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                                     1; Indels
   DB 2;
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   Score 18.4; DB
Pred. No. 15;
0; Mismatches
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                                                                          GGGGTCAACGTTCAGGGGGG 20
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   92.0%;
95.0%;
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                                                                                                                                                                                                     AAA90449 standard; DNA; 20
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Query Match
Best Local Similarity 95.0
Matches 19; Conservative
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28-OCT-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unmethylated CG dinuclectide sequences are commonly found in bacterial DNA, and have been found to stimulate the innate immune system. Natural Killer and T cells are activated by exposure to oligonuclectides containing CpG motifs. Oligonuclectides containing CpG motifs can be used as adjuvants in vaccines. The present invention relates to a CpG receptor contains a Toll homology domain (THD). The Toll receptor family are associated with responses to pathogens. CpG oligonuclectides may act as simulators of various immune responses. The CpG receptor or cells expressing the receptor are useful for identifying a compound which binds to or modulates an activity of the CpG receptor. The compounds are useful in e.g. vaccine adjuvants promoting cellmediated immune responses, antibacterials, (e.g. protection from Listeria
bacteria which cause cholera, diphtheria, tetanus and pertussis; lelicobacter pylori and Haemophilus influenzae; and malaria-causing parasites. Sequences AAA90447.490467 represent Thi lymphocyte stimulating oligonucleotides containing at least one CpG motif which are claimed for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immune system stimulator; CpG motif; CpG receptor; CpG-R; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel CpG receptor and nucleic acid molecule encoding the receptor, for modulating immune response and for identifying compounds of therapeutic use which bind and/or modulate the activity of the receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immune response; vaccine adjuvant; tumour immunotherapy; allergy; anti-inflammatory; cystic fibrosis; sepsis; heart disease; chlamydia; inflammatory bowel disease; arthritis; multiple sclerosis; ss.
                                                                                                                                                                               Gaps
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/note= "Phosphorothioate internucleoside linkages"
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                                                                                                                                            DB 3; Length 20;
                                                                                                                                                                               1; Indels
                                                                      use as adjuvants in the compositions of the invention
                                                                                                          Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CpG motif containing oligonucleotide SEQ ID #5.
                                                                                                                                            Score 18.4; DB
Pred. No. 15;
0; Mismatches
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                                                                                                                                                                                                                1 GGGGTCAACGTTCAGGGGG 20
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99US-0167389P.
                                                                                                                                            92.0%;
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                                                                                                                                                                                                                                                                                                                                           AAH20394 standard; DNA; 20
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/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                               Query Match
Best Local Similarity 95.0%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200132877-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified base
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                             03-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                              AAH20394;
                                                                                                                                                                                                                                                                                                        RESULT 22
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The present invention describes methods for inducing interleukin 6 (IL-6), interferon-gamma (IFN-gamma) or IL-12, or for stimulating natural killer cell 1ytic activity. The methods comprise administering to the subject or exposing a natural killer cell to an immunostimulatory nucleic acid. Also described are: (1) inducing IL-6 in a subject comprising administering to the subject to induce IL-6 in the subject the immunostimulatory nucleic acid to stimulating natural killer cell lytic activity comprising exposing a natural killer cell to the immunostimulatory nucleic acid to stimulate natural killer cell lytic activity; (3) inducing interferon-gamma in a subject to treat an immune system deficiency comprising administering to the subject to induce interferon-gamma production, the immunostimulatory nucleic acid; and (4) inducing IL-12 in a subject comprising administering to the subject to induce immunostimulatory nucleic acid. The methods are useful for inducing IL-6,
infection), tumour immunotherapy, allergy treatment, (e.g. suppressing IgE in human PBMC, shifting from Th2 to Th1) and as anti-inflammatory agents (e.g. for use in cystic fibrosis, sepsis, heart disease, chlamydis, inflammatory bowel disease, arthritis and multiple sclerosis). The present sequence represents a CpG motif containing oligonucleotide used in examples demonstrating that CpG oligonucleotides can activate the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immunostimulatory; inducing; natural killer cell; lytic activity;
unmethylated CpG dinucleotide; immune response; B cell proliferation;
Thl; immune activation; interleukin 6; IL-6; interferon gamma; IFN-gamma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Methods for inducing II-6, interferon-gamma or II-12, or stimulating natural killer cell lytic activity in a human, comprise administering to the subject or exposing a natural killer cell to immunostimulatory
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immune response modulating related oligonucleotide SEQ ID NO:90.
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                                                                                                                                                                                             / Match 192.0%; Score 18.4; DB 4; Length Local Similarity 95.0%; Pred. No. 15; left 19; Conservative 0; Mismatches 1: Indele
                                                                                                                                                                Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (COLE-) UNIV IOWA RES FOUND.
(COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
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                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                             1 GGGGTCAACGTTGAGGGGGG 20
                                                                                                                                                                                                                                                                                        1 GGGGTCAACGTTCAGGGGGG
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                                                                                                                             MAPK pathways and NF-kappaB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-380456/40.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cytokine; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-OCT-1996;
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Matches
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The present invention relates to a composition comprising an isolated immunostimulatory nucleic acid which comprises unmethylated cytosine-guanine (CpG) dinucleotides and an antigen in a carrier. The present sequence is an oligonucleotide, which was used in the present invention. The immunostimulatory nucleic acids are useful for ameliorating an immune system deficiency (the presence of tumour, cancer or infectious agent) in a subject. The immunostimulatory nucleic acids are also useful for eseponse to contact with a particular allergen. The immunostimulatory nucleic acids are also useful for vaccination and for treating law and in a subject on administration prior to or in conjunction with a chemotherapy, so that the subject or la conjunction with a chemotherapy, rhe compositions are useful for inducing an antigen consectivity in the subject or the compositions are useful for inducing an antigen appecific immune response in the subject. The compositions can be also used to treat or prevent the symptoms of asthma
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interferon-gamma or IL-12, or stimulating natural killer cell lytic activity in a subject, particularly a human. The methods are particularly useful for modulating an immune response. AAH50571 to AAH50671 represent oligonucleotide sequences used in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Compositions comprising immunostimulatory molecules which comprise unmethylated CpG dinucleotides useful for ameliorating immune system deficiency, treating leukemia and desensitizing subject against allergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                Immunostimulant; antiallergic; cytostatic; antiasthmatic; vaccine;
gene therapy; CpG; immune system deficiency; tumour; cancer; infection;
leukaemia; ss.
                                                                                                                                                                        Gaps
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                                                                                                                                     Length 20;
                                                                                                                                                                      1; Indels
                                                                                                    Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                         DB 4;
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                                                                                                                                       Score 18.4; DB
Pred. No. 15;
0; Mismatches
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(COLE-) COLEY PHARM GROUP INC.
(USSH ) US DEPT HEALTH & HUMAN
                                                                                                                                                                                                          1 GGGGTCAACGTTCAGGGGGG
                                                                                                                                                                                                                                                                                                                                 AAH19262 standard; DNA; 20 BP
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95US-00386063.
                                                                                                                                         92.0%;
95.0%;
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                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                  Oligonucleotide 1585.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-280761/29
                                                                                                                                                     Local Similarity
hes 19; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                  13-JUL-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic.
                                                                           invention
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The present invention describes an improvement to a method requiring the administration of interferon alpha (IFN-alpha), involving administrating annihistering an immunostimulatory nucleic acid (ISNA). The sequences of a number of such nucleic acids are also provided. These may comprise oligonucleotides with phosphorothicate backbones, palindromes, or G-rich sequences. The sequences of the invention are useful in the treatment of proliferative diseases, such as cancers, and viral infections. The present sequence is
                                                                Immunostimulatory nucleic acid; ISNA; human; interferon alpha; IFN-alpha; viral infection; phosphorothioate backbone; palindrome; cancer; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CpG oligodeoxynucleotide; unmethylated; antigen-presenting cell; immunogenic; cytokine release; natural killer cell; NK cell activation; cell-mediated immune response; T-cell response; humoral response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Improving the efficacy of treatments involving the administration of interferon-alpha by co-administering an isolated immunostimulatory nucleic acid.
                                 Human IFN-alpha immunostimulatory nucleic acid SEQ ID NO: 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an example of an immunostimulatory oligonucleotide
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                                                                                                                                                                                                                      /note= "phosphorothioate linkage"
15. .19
                                                                                                                                                                                                                                                                                                 /note= "phosphorothioate linkage"
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95.0%; Pred. No. 15
                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Krieg A;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hartmann G, Bratzler RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
11-JUN-2001 (first entry)
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/*tag=
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nes 19; Conserv
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                                                                                                                                                                          modified base
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                                                                                                                                                                                                                                                                                                                                                                         05-APR-2001
                                                                                                                         Synthetic
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                                                                                                                                                             Key
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                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory nucleic acid; ISNA; human; interferon alpha; IFN-alpha; viral infection; phosphorothioate backbone; palindrome; cancer; ds.
                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Improving the efficacy of treatments involving the administration of interferon-alpha by co-administering an isolated immunostimulatory
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                                  Score 18.4; DB 4; Length 20; Pred. No. 15;
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Pred. No. 15;
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                                                                     Indels
                                                                                                                                                                                                                                                                                                                                      Poly-G immunostimulatory nucleic acid SEQ ID NO: 135
 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 20 BP; 3 A; 2 C; 12 G; 3 T; 0 U; 0 Other;
                                                                     1;
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                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 24; 168pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Krieg A;
                                                                                                        1 GGGGTCAACGTTCAGGGGG 20
                                                                                                                              1 GGGGTCAACGTTCAGGGGGG 20
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                                  92.0%;
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Best Local Similarity 95.0%;
Matches 19; Conservative
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                                                                                                                                                                                                                                 AAF98854 standard; DNA; 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bratzler RL,
                                                                                                                                                                                                                                                                                                     (first entry)
                                                                       Conservative
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                                                   Best Local Similarity
Matches 19; Conserv
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   Sequence 20
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The invention relates to novel immunogenic CpG oligodeoxynucleotides (AAC80581-C80723). The oligonucleotide are at least 10 bases long and comprise one of the generic sequences 5.*NNNT-CpG-WNNN-3' or 5.*RX-CpG-RY -3'. The central CpG motif is unmethylated, and the oligonucleotides coptionally have phosphorothioate linkages which make them more resistant corporatedation. The invention also relates to an oligonucleotide delivery complex comprising an oligonucleotide of the invention and a targetting agent, and a pharmaceutical composition comprising the oligonucleotide of the invention and a targetting agent, and a pharmaceutical composition comprising the oligonucleotide of elivery complex. The oligonucleotides are able to induce elither a cell-mediated (T-cell) response or a humoral (B-cell, antibody) response, with colliquated fresponse, and those of the sequence 5'.NNT-CpG-WNNN-3' cell-mediated response, and those of the sequence 5'.NNT-CpG-WNNN-3' cell-mediated response, and dendritic cells), which then release cytokines, cell-mediated cation, the oligonucleotide acts on antigen-presenting cells (e.g., macrophages and dendritic cells), which then release cytokines, leading to activation of natural killer (RK) cells. A cell-mediated or humoral response can then occur by activation of T- or B-cells. The induction of an immunogenic CpG oligonucleotide is administered either alone or ameniorating an allergic reaction (preferably asthma), or an infection, where an immunogenic CpG oligonucleotide is administered either alone or in combination with an anti-allergenic agent or anti-infectious agent. The allergic conditions which may be treated include eczema, allergic conditions, and the infections which may be treated include eczema, allergic conditions, and the infections which may be treated include eczema, allergic conditions, and the infections which may be treated include eczema, allergic conditions, and the infections which may be treated include eczema, allergic conditions, and the infections which may be tr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel oligonucleotides useful for the prevention and treatment of allergies, cancer, and autoimmune disorders and for ameliorating symptoms resulting from exposure to a bio-warfare agent.
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     vaccine;
B-cell response; antibody production; immune response induction; vaccine allergy; asthma; infection; bacterial; viral; fungal; protozoal; parasitic; tuberculosis; AIDS; autoimmune disease; lupus erythematosus; rheumatoid arthritis; multiple sclerosis; solid tumour; cancer; immune deficiency; biological warfare agent; cytostatic; antiarthritic; antimicrobial; antiallergic; protozoacide; tuberculostatic; antiarthritic; antiasthmatic; dermatological; phosphorothioate; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ymphocytes ex vivo, producing activated lymphocytes which are then
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                                                                                                                                              present sequence represents an immunogenic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New vaccine formulation comprising human immunodeficiency virus (HIV) antigen and immunostimulatory CpG oligonucleotide, useful for preventing and treating HIV infections in a patient.
                                                                                                                                                                                                                                                               Immunostimulatory CpG oligonucleotide WD1004 for use in an HIV vaccine.
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95.0%; Pre-
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31-JAN-2000; 2000GB-00002200
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a method for stimulating an immune response. The method comprises administering an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immune response. The present sequence is one such immunostimulatory nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich (py-rich) or thymidine (T) rich. The method is used to vaccinate subjects against tumour antigens, viral antigens (e.g. herpesviridae, retroviridae and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, haemophilus, campylobacter, clostridium, Escherichia coll and/or staphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allersy or minmune deficiency. The present sequence can also be used to redirect a
                                                                  Vaccine, cytostatic, virucidal, bactericidal, fungicidal, anti-parasitic, immunostimulatory, tumour; viral infection, bacterial infection; fungal infection, parasitic infection; cancer, asthma, infections disease, allergy, immune deficiency; phosphorothioate; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                        Vaccinating against tumors, infectious diseases, allergies and asthma
using immunostimulatory Py-rich and TG nucleic acids.
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                                          Immunostimulatory nucleic acid #683.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 101; Page 53; 338pp; English.
                                                                                                                                                                                                                                                                                                                                                    Vollmer J;
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27-SEP-1999; 99US-0156135P.
23-AUG-2000; 2000US-0227436P.
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1 GGGGTCAACGTTGAGGGGGG

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The present invention relates to a method for stimulating an immune response. The method comprises administering an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immune response. The present sequence is one such immunostimulatory nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich (py-rich) or thymidine (T) rich. The method is used to vaccinate subjects against tumour antigens, viral antigens (e.g. herpseviridae, retroviridae and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, haemophilus, campylobacter, clostridium, Escherichia coli and/or staphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allergy or immune deficiency. The present sequence can also be used to redirect a Th2 to a Th1 immune response and to activate immune cells. Note: the
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| AX105103 Sequence AX105236 Sequence AX135634 Sequence AX13569 Sequence | AX355409 Sequence AX355409 Sequence AX465439 Sequence AX468483 Sequence AX547380 Sequence AX547629 Sequence | AX547029 sequence<br>AX547830 sequence<br>BD009060 Immunosti<br>BB008994 Use of nu<br>AX104812 sequence<br>AX105257 sequence | AX547865 Sequence<br>AX104326 Sequence<br>AX547379 Sequence<br>BC081073 Xenopus 1<br>CQ753472 Sequence<br>CQ753473 Sequence | AX19446 Sequence AX465396 Sequence AX771751 Sequence AX771752 Sequence AX013515 Homo sapi AX022933 Homo sapi | AC117835 Rattus no AC07501 Homo Bapi AC07501 Homo Bapi AC107401 Rattus no AC106164 Rattus no AC166164 Rattus no AC166164 Rattus no AC16613 Sequence AJ313180 Synthetic BX936413 Zebrafish AL666930 Mouse DNA AC11314 Homo Bapi AC13764 Homo Bapi AC1544 Homo Bapi AC154418 Homo Bapi AC668418 Homo Bapi AC6987050 Sequence   | AJ609139 ACINOPIA AJ632270 ACINOPIA ACI15247 Rattus no ACI17198 Mus muscu ACI17198 Mus muscu ACI07105 Rattus no ACI07605 Macaca mu ACI46690 Macaca mu ACI48690 Macaca mu ACI48690 Macaca mu ACI48690 Rattus no | AC10662 Rattus no AC10662 Rattus no AC126638 Rattus no AC176429 Mus muscu AC17115 Rattus no AC17115 Rattus no AR301405 Sequence AR15663 Sequence BD267671 Methods a BD267077 Stereolso AX106169 Sequence AX106169 Sequence AX165584 Sequence AX786555 Sequence  |
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| GenCore version 5.1.6<br>Copyright (c) 1993 - 2005 Compu               | Bearch, using sw model ember 3, 2005, 04:51:32  | 5-1<br>:tcagggggg 20   | p 10.0 , Gapext 1.0<br>233 segs, 24227607955 residues<br>satisfying chosen parameters:                                      | ngth: 0 angth: 2000000000 Minimum Match 0% Maximum Match 100% Listing first 90 summaries                     |  | number of results predi<br>an or equal to the score<br>y analysis of the total<br>SUMMARIES<br>Length DB ID  | 0 20 6 AR096686<br>0 20 6 AX342378<br>0 20 6 AX342438<br>0 20 6 AX342438<br>0 20 6 AX144761<br>0 20 6 AR154761<br>0 20 6 BD190419<br>0 20 6 BD251267<br>0 20 6 AR182880<br>0 20 6 AR182887<br>0 20 6 AR322313<br>0 20 6 AX18283<br>0 20 6 AX18283 |
| 8  | OM nucleic - nucleic<br>Run on: Sept  | Title: US-1 Perfect score: 20 Sequence: 1 gg   | table:<br>d:<br>amber of  | Minimum DB seq length: Maximum DB seq length: Post-processing: Minimum Maximum Listin                        | Gen<br>Databage : Gen<br>3:<br>3:<br>4:<br>6:<br>6:<br>7:<br>8:<br>10:<br>11:<br>12:   | Pred. No. is the score greater the and is derived be Result Guery No. Score Match  | 1 20 100.0<br>2 2 100.0<br>4 20 100.0<br>5 18.4 92.0<br>10 18.4 92.0<br>10 18.4 92.0<br>11 18.4 92.0<br>12 18.4 92.0<br>13 18.4 92.0<br>14 18.4 92.0<br>18 18.4 92.0<br>19 18.4 92.0<br>19 18.4 92.0<br>19 18.4 92.0<br>19 18.4 92.0<br>19 18.4 92.0<br>10 18.4 92.0<br>11 18.4 92.0<br>11 18.4 92.0  |

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PAT 12-JAN-2002

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TITLE JOURNAL FEATURES

AUTHORS

REFERENCE

DEFINITION ACCESSION VERSION KEYWORDS

RESULT 1 AR096686

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100.0%; Score 20; DB 6; Length 20; 100.0%; Pred. No. 19;
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THE UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
Location/Qualifiers
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Patent: EP 11673798-A 1 02-JAN-2002;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
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Immunomodulatory oligonucleotides
Immunomodulatory oligonucleotides
Inthose 105 194388-A 1 27-FEB-2001;
Location/qualifiers
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Patent: US 6008200-A 1 28-DEC-1999;
Location/Qualifiers

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AR135030.1 GI:14123935
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Sequence 1 from patent US 6008200.
AR096686
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DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM

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PAT 12-JAN-2002

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RESULT 6. AR140453

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BD251267.1 GI:33061037
JP 2002537353-4/3.
Sprince construct
Synthetic construct
other sequences; artificial sequences.
Sprince construct
other sequences; artificial sequences.

Sprince construct
other sequences artificial sequences.

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other sequences artificial sequence of ligonuclectide

Brancement of Neisseria antigen bactericidal activity using CG
motif-containing oligonuclectide

Datent: JP 2002537353-A 3 05-NOV-2002;
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OS Artificial Sequence
PN JP 2002537353-A/3
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PN JP 2002537353-A/3
PN JP 2002537353-A/3
PN JP 20025375354
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Enhancement of Neisseria antigen bactericidal activity using CG
motif-containing oligonucleotide.
synthetic construct

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ther sequences, artificial sequences.

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S and Obagan, D.

Microemulsions with Adsorbed Macromoelecules and Microparticles

D patent: JP 2002537102-A 3 05-NOV-2002;

Chiron Corporation

OS Artificial Sequence

PN JP 2002537102-A/3

PD 05-NOV-2002

PR 09-FEB-2000 JP 2000600618

PR 29-JUL-1999 US 60/146391, 28-OCT-1999 US 60/161997, PR

26-FEB-1999 US 60/121858

PI john barackman, manmohan simph, mildred ugozoli, jina kazazu, john
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JP 2002537353-A/3
05-NOV-2002
09-FEB-2000 JP 2000600685
26-FEB-1999 US 60/121792
GUIDO GRANDI,RINO RAPPUOLI,MARZIA MONICA GIULIANI,MARIAGRAZIA
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                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown.
Unknown.
Unclassified.
Unclassified.
I (bases 1.0.20)
Xrieg,A.M., Kline,J., Klinman,D. and Steinberg,A.D.
Immunostimulatory nucleic acid molecules
Patent: US 6207646-A 12 27-MAR-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                              linear
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1 (bases 1 to 20)

1 (Arieg, A.m. and Kline, J.N.

Immunostimulatory nucleic acid molecules

Patent: US 6239116-A 90 29-MAY-2001;

Location/Qualifiers
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                Similarity 100.0%; Pred. No. 19; 20; Conservative 0; Mismatches
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/mol_type="unassigned DNA"
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Sequence 12 from patent US 6207646.
AR140463.1 GI:14482949
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/wol_type="unassigned DNA"
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Sequence 90 from patent US 6239116.
AR154761.1 GI:15122814
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DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM

AR154761 LOCUS RESULT 7

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TITLE JOURNAL FEATURES

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REFERENCE AUTHORS LOCUS DEFINITION ACCESSION VERSION KEYWORDS

RESULT 8 BD190419

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PAT 18-DEC-2003

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Unclassified.

1 (bases 1 to 20)

Krieg,A.M. and Weiher,G.

Method of treating cancer using immunostimulatory oligonucleotides
Patent: US 6653292-A 12 25-NOV-2003;

Location/Qualifiers
                                                                                                  Immunostimulatory nucleic acid molecules for activating dendritic cells
                                                                                                                                                                                                                                               Query Match 92.0%; Score 18.4; DB 6; Length 20; Best Local Similarity 95.0%; Pred. No. 1.3e+02; Matches 19; Conservative 0; Mismatches 1; Indels
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Pred. No. 1.3e+02;
0; Mismatches 1;

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/organism="synthetic construct"
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SMITHKLINE BEECHAM BIOLOGICALS S.A. (BE)
Location/Qualifiers
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Location/Qualifiers
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Sequence 12 from patent US 6653292.
AR432435.1 GI:40194770
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Sequence 4 from Patent WO0100231.
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/organism="unknown"
/mol_type="genomic DNA"
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/organism="unknown"
/mol_type="genomic DNA"
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                                              Unknown.
Unclassified.
1 (bases 1 to 20)
Krieg, A.M. and Hartmann, G.
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                                                                                                                                                                                                                                                                         Unknown.
Unclassified.
I (bases 1 to 20)
I (bases 1 to 20)
Krieg. A.M., Davis, H.L., Wu, T. and Schorr, J.
Krieg. A.M., Davis, H.L., Wu, T. and Schorr, J.
Vectors and methods for immunization or therapeutic protocols
Patent: US 6339068-A 52 15-JAN-2002;
Patent: US 6339068-A 52 15-JAN-2002;
Location/Qualifiers
                                                Gaps
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Krieg, A.M., Davis, H.L., Wu, T. and Schorr, J.

Vectors and methods for immunization or therapeutic protocols

Patent: US 6339068-A 59 15-JAN-2002;

Location/Qualifiers
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              Query Match 92.0%; Score 18.4; DB 6; Length 20; Best Local Similarity 95.0%; Pred. No. 1.3e+02; Matches 19; Conservative 0; Mismatches 1; Indels
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AR182880
AR182880.1 GI:20226087
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/wol_type="unassigned DNA"
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Sequence 47 from patent US 6429199.
AR222213
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AR182880
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Immunostimulatory nucleic acids
Patent: WO 0122972-A 968 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
                                                                                                                                                                                                                                                   Krieg,A.M., Schetter,C. and Vollmer,J.C.
Immunostimulatory nucleic acids
Patent: WO 0122972-A 767 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
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    forganism="synthetic construct"
|mol type="unassigned DNA"
|db_xref="taxon:32630"

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    forganism="synthetic construct"
|mol type="unassigned DNA"
|db_xref="taxon:32630"

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Sequence 968 from Patent WO0122972.
AXI04776
AXI04776.1 GI:13920973
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Sequence 767 from Patent WO0122972.
AX104575
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Immunostimulatory nucleic acids
Patent: WO 0122972-A 519 05-ARP-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US); Coley Pharmaceutical
/db xref="taxon:32630"
/noTe="oligonucleotide-nucleotides 1,2,15,16,17,18 and 19
have linkages with a thioate modification"
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92.0%; Score 18.4; DB 6; Length 20;
Best Local Similarity 95.0%; Pred. No. 1.3e+02;
Matches 19; Conservative 0; Mismatches 1; Indels
                                                                                Length 20;
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|mol_type="unassigned DNA"
|mol_type="unassigned"
|mol_ter="cxon:32630"
|note="CyG containing oligonucleotide"
                                                                                Query Match
92.0%; Score 18.4; DB 6;
Best Local Similarity 95.0%; Pred. No. 1.3e+02;
Matches 19; Conservative 0; Mismatches 1;
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/mol_type="unassigned DNA"
/db_xref="taxon:32630"
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SmithKline Beecham Biologics SA (BE)
Location/Qualifiers
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Sequence 519 from Patent WO0122972.
AXI04327
AXI04327.1 GI:13920524
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Sequence 4 from Patent WO0100232.
AX088932
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Patent: WO 0122990-A 135 05-APR-2001;
Coley Pharmaceutical Group, Inc. (US) ; UNIVERSITY OF IOWA RESEARCH
FOUNDATION (US)
                                                                                                                                    Hartmann, G.D., Bratzler, R.L. and Krieg, A.U.
Methods related to immunostimulatory nucleic acid-induced
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Cpg receptor (cpg-r) and methods relating thereto
Patent: WO 0132877-A 5 10-MAY-2001;
CHIRON CORPORATION (US)
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/organism="synthetic construct"
/or_ltype="unassigned DNA"
/db_xref="taxon:32630"
/note="Synthetic Oligonucleotide"
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Pred. No. 1.3e+02;
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/organism="synthetic construct"
/mol_type="unassigned DNA"
/db xref="taxon:32630"
/noFe="CpG oligonucleotide"
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other sequences; artificial sequences.
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Sequence 135 from Patent WO0122990.
AX105236
AX105236.1 GI:13921386
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Sequence 89 from Patent W00151500.
AX194489
AX194489.1 GI:15385145
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Sequence 5 from Patent WO0132877.
AX135634.1 GI:14271904
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Best Local Similarity 95.0%;
Matches 19; Conservative 0
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Coley Pharmaceutical Group, Inc. (US) ; UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
Location/Qualifiers
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                                                                                                                  Krieg, A.M., Schetter, C. and Vollmer, J.C.
Immunostimulatory nucleic acids
acids
batent: WO 0122972-A 969 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US); Coley Pharmaceutical
GMbH (DE)
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Methods related to immunostimulatory nucleic acid-induced
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note="Backbone has phosphorothioate linkages."
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/note="Backbone has phosphodiester linkages."

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Mol type="unassigned DNA"
/db xref="texton:32630"
/noTexte="texton:32630"
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/db_xref="taxon:32630"
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                   AX104777.1 GI:13920974
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                                                    synthetic construct
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Vaccine against RSV
Patent: WO 0211761-A 107 14-PEB-2002;
HENRY M. JACKSON FOUNDATION FOR THE ADVANCEMENT OF MILITARY
MEDICINE (US)
1. .20 | ___synthetic construct" | /organism="synthetic construct" | /mol_type="unassigned DNA" | /db xref="taxon:32630" | /note="synthetic oligonucleotide-phosphorothioate backbone"
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/mol_type="unassigned DNA"
/db_xref="taxon:33630"
/note="Artificial sequence is synthesized"
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/organism="synthetic construct"
/mol_type="unassigned DNA"
/db xref="taxon:32630"
/noTe="Synthetic oligonucleotide"
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Sequence 107 from Patent WO0211761.
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Sequence 3 from Patent WO0226209.
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AX468483.1 GI:21901313
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                   Klinman, D., Ishii, K. and Verthelyi, D.
Oligodeoxynucleotide and its use to induce an immune response
Patent: WO 0151500-A 89 19-JUL-2001;
Secretary of the Department of Health and Human Services (US)
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phosphorothioate at 5 and 3 ends"
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Patent: WO 0197843-A 436 27-DEC-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
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                                                                                                                         organism="synthetic construct"
| mol type="unassigned DNA"
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Methods for enhancing antibody-induced
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                         92.0%; Score 18.4; DB 6; Length 20; 95.0%; Pred. No. 1.3e+02; ive 0; Mismatches 1; Indels
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AX547380.1 GI:25812524
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Copyright (c) 1993 - 2005 Compugen Ltd.
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No.
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| equence 175 equence 291 equence 291 equence 962 equence 963 equence 973 equence 973 equence 973 equence 973 equence 973 equence 976 equence 978 equence 988 equence 989  | quence 99901, quence 100166, quence 100163, quence 100639, quence 100699, quence 101269, quence 101269, quence 101269, quence 101269, quence 101269, quence 2011891, quence 2753, quence 11366, quence 114646, quence 114646, quence 14546, quence 14546, |
|--|---|
| 09-949-016-009-2488-796A-009-2488-796A-009-9489-016-009-949-009-949-009-949-009-949-009-949-009-949-009-949-009-949-009-949-009-949-009-949-94 | 0.0000011111111111111111111111111111111   |
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| 24729<br>4729<br>324<br>4729<br>6011<br>6011<br>6011<br>6011<br>6011<br>6011<br>6011<br>601  | 601<br>601<br>601<br>601<br>601<br>601<br>601<br>601<br>601<br>601  |
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ALIGNMENTS

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                          TELEFAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 20 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 95.09
Matches 19, Conservative
                                                                                                                                                                                                                            ; TOPOLOGY: linear; MOLECULE TYPE: DNA US-08-386-063-1
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 20; Conserv
      TELEPHONE:
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; Patent No. 6194388
; GENERAL INFORMATION:
    APPLICANT Arthur M Krieg, M.D.
    TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
    NUMBER OF SEQUENCES: 27
; CORRESPONDENCE ADDRESS:
    ADDRESSEE: LAHIVE & COCKFIELD
    STREET: 60 STATE STREET, SUITE 510
    CITY: BOSTON
    STATE: MASSACHUSETTS
    COUNTRY: USA
    COMPUTER: FLORPY disk
    COMPUTER: IBM PC compatible
    COMPUTER: IBM PC compatible
    COMPUTER: IBM PC compatible
    COMPUTER: IBM PC compatible
    COMPUTER: LEW PC COMPATIBLE SOFTWARE: ASCII text
    CURRENT APPLICATION DATA:
    CURRENT APPLICATION NUMBER: US/08/386,063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 20; DB 3; Length 20; 100.0%; Pred. No. 1.3; ive 0; Mismatches 0; Indels
APPLICANT: Arthur M. Krieg, M.D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD
STREET: 60 STATE STREET, SUITE 510
                                                                                                                                        STREET. SUITE STREET, SUITE STREET CITY: BOSTON
STATE: MASSACHUSETTS
COUNTRY: USA
ZIP: 02109-1875
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: ASCII text
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/386,063
FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: ARNOLD, BETHE STATON:
TELEPHONE: (617)227-7400
TELEPHONE: (617)227-7400
TELEPHONE: (617)227-7401
TELEPHONE: (77)227-7401
TELEPHONE: (77)227-7401
TELEPHONE: (77)227-7401
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TELEPHONE: (617)227-7401
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NAME: ARNOLD, BETH E.
REGISTRATION NUMBER: 35,430
REFERENCE/DOCKET NUMBER: UIZ-013CP
FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GGGGTCAACGTTCAGGGGGG 20
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Best Local Similarity 100.
Matches 20; Conservative
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US-08-386-063-1
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; Sequence 63, Application US/09030701B
; Patent No. 6214806
; GENERAL INFORMATION:
; APPLICANT: Krieg, Arthur M.
; APPLICANT: Schwartz, David A.
; TITLE OF INVENTION: UNMETHYLATED CPG DINUCLECTIDE IN THE TREATMENT OF TITLE OF INVENTION: UNMETHYLATED DISORDERS
; TITLE OF INVENTION: LPS-ASSOCIATED DISORDERS
; TITLE OF INVENTION: LPS-ASSOCIATED DISORDERS
; FILE REFERENCE: C1039/7011
; CURRENT APPLICATION NUMBER: US/09/030, 701B
; CURRENT FILING DATE: 1998-02-25
; PRIOR PILING DATE: 1997-02-28
; NUMBER OF SEQ ID NOS: 65
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 63
; LENGTH: 20
                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                       | Sequence 12, Application US/08738652B |
| Sequence 12, Application US/08738652B |
| Patent No 6207646 |
| Patent No 6207646 |
| TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules |
| TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules |
| FILE REPERENCE: C1039/7004 HGL |
| CURRENT APPLICATION NUMBER: US/08/738,652B |
| CURRENT APPLICATION NUMBER: US 08/276,358 |
| EARLIER FILING DATE: 1994-07-15 |
| EARLIER FILING DATE: 1994-07-15 |
| KARLIER FILING DATE: 1995-02-07 |
| NUMBER OF SEQ ID NOS: 55 |
| SEQ ID NO 12 |
| LENGTH: 20 |
| LENGTH: 20 |
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100.0%; Score 20; DB 3; Length 20; nilarity 100.0%; Pred. No. 1.3; Conservative 0; Minnethermore
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GGGGTCAACGTTCAGGGGGG 20
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LENGTH: 20
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MEDION TYPE: Floppy disk

COMPUTER: IBM FC compatible

COMPUTER: IBM FC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: ASCII text

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/960,774

FILING DATE: 30-October-1997

CLASSIFICATION: DATA:

APPLICATION NUMBER: U.S. Serial No. 6239116 08/738,652

FILING DATE: October 30, 1996

CLASSIFICATION: S14

ATTORNEY/AGENT INFORMATION:

NAME: Haile, Liea A.

REGISTRATION NUMBER: 38,347

REGISTRATION NUMBER: 38,347

REGISTRATION NUMBER: 38,347

REGISTRATION NUMBER: 09918/012001

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMPUTER: 619/678-5079
                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:

APPLICANT: Krieg et al.,

APPLICANT: Krieg et al.,

TITLE OF INFORMATION: IMMUNOSTIMULATORY NUCLEIC ACID MOLECULES

NUMBER OF SUGENCES: 111

CORRESPONDENCE ADDRESS:

ADDRESSEE: Fish & Richardson P.C.

STRRET: 4225 Executive Square, Suite 1400

CITY: La Jolla

STATE: CA

COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 18.4; DB 3; Length 20; Pred. No. 7.7; 0; Mismatches 1; Indels
                                                                                                       Length 20;
                                                                                                                                                  Indels
                                                                                                    Query Match 92.0%; Score 18.4; DB 3; Best Local Similarity 95.0%; Pred. No. 7.7; Matches 19; Conservative 0; Mismatches 1;
                  FEATURE:
, OTHER INFORMATION: synthetic oligonucleotide
US-09-030-701-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-082-649B-52
; Sequence 52, Application US/09082649B
Patent No. 6339068
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                              Sequence 90, Application US/08960774
Patent No. 6239116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GGGGTCAACGTTCAGGGGG 20
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                                                                                                                                                                                                                         1 GGGGTCAACGTTGAGGGGGG 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 95.0%;
Matches 19; Conservative (
ORGANISM: Artificial Sequence
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US-08-960-774-90
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USA
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US-08-960-774-90
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Davis, Heather L.

APPLICANT:

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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; Sequence 59, Application US/09082649B
; Patent No. 6339068
; GRNERAL INFORMATION:
GAPELICANT: NFORMATION:
APPLICANT: Krieg, Arthur M.
; APPLICANT: Krieg, Arthur M.
; APPLICANT: Chorr, Joachim
APPLICANT: Chorr, Joachim
APPLICANT: Wu, Tong
TITLE OF INVENTION: Vectors and Methods for Immunization or
TITLE OF INVENTION: Therapputic Protocols
FILE REFERENCE: Cl03977009
CURRENT FILING DATE: 1998-05-20
FRIOR FILING DATE: 1997-05-20
FRIOR PILING DATE: 1997-05-20
FRIOR FILING DATE: 1997-05-20
FRIOR FILING DATE: 1997-05-20
FRIOR FILING DATE: 1997-05-20
SOFTWARE OF SEQ ID NOS: 85
SOFTWARE FREED FOR Windows Version 3.0
APPLICANT: Krieg, Arthur M.
APPLICANT: Schorr, Joachim
APPLICANT: Wu, Tong
TITLE OF INVENTION: Therapeutic Protocols
TITLE OF INVENTION: 1998-05-20
THORE TILING DATE: 1997-05-20
THOR PRIOR PILING DATE: 1997-05-20
THOMER OF SEQ ID NOS: 85
SOFTWARE: FRASERE FOR WINDOWS VERSION 3.0
SEQ ID NO 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 92.0%; Score 18.4; DB 3; Length 20; Best Local Similarity 95.0%; Pred. No. 7.7; Matches 19; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
COTHER INFORMATION: synthetic oligonucleotide
NAME/KEY: misc_feature
LCCATION: (0)...(0)
COTHER INFORMATION: Has a phosphorothicate backbone.
US-09-082-649B-52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 92.0%; Score 18.4; DB 3; Best Local Similarity 95.0%; Pred. No. 7.7; Matches 19; Conservative 0; Mismatches 1;
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ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Artificial Sequence
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US-09-082-649B-59
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APPLICANT: Davis, Heather L.
APPLICANT: Bavis, Heather L.
APPLICANT: Krieg, Arthur M.
APPLICANT: Schorr, Joachim
APPLICANT: Genorr, Joachim
APPLICANT: Genorr, Joachim
APLICANT: Wu, Tong
TITLE OF INVENTION: Vectors and Methods for Immunization or
TITLE OF INVENTION: Therapeutic Protocols
TITLE OF INVENTION: Therapeutic Protocols
FILE REFERENCE: C1039/7057 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/965,101
CURRENT FILING DATE: 1090-026
PRIOR APPLICATION NUMBER: US 60/047,233
PRIOR APPLICATION NUMBER: US 60/047,209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Davis, Heather L.
APPLICANT: Bavis, Heather L.
APPLICANT: Krieg, Arthur M.
APPLICANT: Schort, Joachim
APPLICANT: Schort, Joachim
APPLICANT: Windows and Methods for Immunization or TITLE OF INVENTION: Therapeutic Processing
TITLE OF INVENTION: Therapeutic Processing
FILE REFERENCE: C1039/7057 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/965,101
CURRENT APPLICATION NUMBER: US 09/082,649
PRIOR APPLICATION NUMBER: US 09/082,649
PRIOR PLING DATE: 1998-05-20
PRIOR APPLICATION NUMBER: US 60/047,233
PRIOR APPLICATION NUMBER: US 60/047,209
PRIOR APPLICATION NUMBER: US 60/047,209
PRIOR APPLICATION NUMBER: US 60/047,209
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 18.4; DB 4; Length 20; Pred. No. 7.7;
Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTHER INFORMATION: synthetic oligonucleotide; NAMEKKEY: misc_feature; LOCATION: (0)...(0); LOCATION: (0)...(0); OTHER INFORMATION: Has a phosphorothicate backbone.US-09-965-101-52
ä
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
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US-09-965-101-59
; Sequence 59, Application US/09965101
; Patent No. 6821957
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                        US-09-965-101-52
; Sequence 52, Application US/09965101
; Patent No. 6821957
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Best Local Similarity 95.0%;
Matches 19; Conservative
19; Conservative
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SEQ ID NO 59
LENGTH: 20
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   Matches
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APPLICANT: Katieg, Arthur M.
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Imminostimulatory Nucleic Acid Molecules
TITLE OF INVENTION: Imminostimulatory Nucleic Acid Molecules
TITLE OF INVENTION: for Activating Dendritic Cells
FILE REFERENCE: C1039/7017
CURRENT PELLING DATE: 1999-11-13
EARLIER PILING DATE: 1999-110-30
EARLIER PILING DATE: 1999-10-30
EARLIER PELLING DATE: 1996-10-30
EARLIER FILING DATE: 1995-02-07
EARLIER FILING DATE: 1995-02-07
EARLIER PILING DATE: 1995-02-07
EARLIER FILING DATE: 1995-02-07
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APPLICANT: Krieg, Arthur M.
TITLE OF INVENTION: Methods of Treating Cancer Using
TITLE OF INVENTION: Immunostimulatory Oligonucleotides
FILE REFERENCE: C1039/7021/HCL
CURRENT APPLICATION NUMBER: US/09/337,619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 18.4; DB 3;
Pred. No. 7.7;
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95.0%; Pred. No. ...
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: synthetic oligonucleotide US-09-191-170-47
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EARLIER APPLICATION NUMBER: US 08/960,774
EARLIER FILING DATE: 1999-06-21
EARLIER FILING DATE: 1997-06-30
EARLIER FILING DATE: 1996-10-30
EARLIER FILING DATE: 1994-07-15
NUMBER OF SEQ ID NOS: 123
SOFTWARE: FABSESEQ for Windows Version 3.0
SEQ ID NO 12
LENGTH: 20
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 47
LENGTH: 20
                                                                                                                                                        ; Sequence 47, Application US/09191170
; Patent No. 6429199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-337-619-12; Sequence 12, Application US/09337619; Patent No. 6653292
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   1 GGGGTCAACGTTGAGGGGGG 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 95.0
Matches 19; Conservative
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Best Local Similarity
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SEQUENCE DESCRIPTION: SEQ ID NO: 111
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Best Local Similarity
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Best Local Similarity
                  US-08-150-204E-111
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                                                                                              Matches
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                                          PEATURE:
OTHER INPORMATION: synthetic oligonucleotide
NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: end, five S-linkages at the 5'
OTHER INFORMATION: end, five S-linkages at the 3' end, and O-linkages
OTHER INFORMATION: in between.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KIM, Chun Hyung
KIM, Sung Taek
YANG, Jae Young
TITLE OF INVENTION: HEPATITIS C DIAGNOSTICS AND VACCINES
                                                                                                                                                                                                                Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Daejeon
STATE: Daejeon
COUNTRY: Republic of Korea
ZIP: 305-340
COMPUTER READABLE FORM
MEDIUM TYPE: Diskette, 3.5inch, 1.44MB storage
COMPUTER: IBM PC/pentium
OPERATING SYSTEM: Windows
SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/150,204E
                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                              Score 18.4; DB 4;
Pred. No. 7.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: YANG, Jae Young
STREET: 386-1, Doryong-dong, Yuseong-gu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: NS2-LBC31, Fig. 18
                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 2695/FLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: KR 91-9510
FILING DATE: 10-JUN-1991
APPLICATION NUMBER: KR 91-13601
FILING DATE: 6-AUG-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Shahan Islam, Esq.
REGISTRATION NUMBER: 32,507
                                                                                                                                                                                                                                                                                                                                                                                                             US-08-150-204E-111
; Sequence 111, Application US/08150204E
; Patent No. 6538126
; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 940-8564
                                                                                                                                                                                                                                                                                               1 GGGGTCAACGTTCAGGGGGG 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHO, Joong Myung
LEE, Yong Beom
PARK, Young Woo
LIM, Kook Jin
CHOI, Deog Young
SO, Hong Seob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (212) 940-8776
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STRANDEDNESS: single
                                                                                                                                                                                                                  Query Match
Best Local Similarity 95.0%;
Matches 19; Conservative (
          TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: DNA FEATURE:
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APPLICANT: Krieg, Arthur M.
APPLICANT: Weiner, George
TITLE OF INVENTION: Immune System Using Immunotherapeutic Oligonucleotides and
TITLE OF INVENTION: Cytokines
FILE REFERENCE: C1039/7026/HCL
CURRENT APPLICATION NUMBER: US/09/286,098
CURRENT FILING DATE: 1999-04-0.86/080,729
EARLIER APPLICATION NUMBER: US 60/080,729
EARLIER FILING DATE: 1998-04-0.3
SOFTWARE: FEASTEQ for Windows Version 3.0
SEQ ID NO 52
LENGTH: 19
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APPLICANT: Krieg, Archur M.

APPLICANT: Krieg, Archur M.

APPLICANT: Schwartz, David A.

TITLE OF INVENTION: UNMETHYLATED CpG DINUCLEOTIDE IN THE TREATMENT OF

TITLE OF INVENTION: LPS-ASSOCIATED DISORDERS

FILE REFERENCE: Cl039/7011

CURRENT APPLICATION NUMBER: US/09/030,701B

CURRENT FILING DATE: 1998-02-25

PRIOR PLLING DATE: 1997-02-28

NUMBER OF SEQ ID NOS: 65

SOFTWARE: FASTSEQ for Windows Version 3.0
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             Length 318;
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           Score 16; DB 4; Le
Pred. No. 1.4e+02;
0; Mismatches 0;
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Pred. No. 1.4e+02;
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Pred. No. 1.4e+02;
0; Mismatches 2;
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                                                                                                                                                                                                                                                    Sequence 21, Application US/09030701B Patent No. 6214806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 52, Application US/09286098 Patent No. 6218371 GENERAL INFORMATION:
100.0%; Scor.
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89.5%;
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                                                                                                5 TCAACGTTCAGGGGG 20
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                 Query Match 80.0
Best Local Similarity 100.
Matches 16; Conservative
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FEATURE:
; OTHER INFORMATION: Synthetic Oligonucleotide
US-09-325-193A-46
PRIOR APPLICATION NUMBER: US 09/154,614
PRIOR FILING DATE: 1998-09-16
PRIOR APPLICATION NUMBER: PCT/US98/04703
PRIOR FILING DATE: 1998-03-10
PRIOR APPLICATION NUMBER: US 60/040,376
PRIOR FILING DATE: 1997-03-10
NUMBER OF SEQ ID NOS: 98
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 46
LENGTH: 19
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Patent No. 6610308
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Best Local Similarity 89.5%;
Matches 17; Conservative C
                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA ORGANISM: Artificial Sequence
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US-09-949-016-16960
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               Gaps
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                                                                                                                                                                                                                                                                                              US-08-960-774-12
| Sequence 12. Application US/08960774
| Patent No. 6239116
| Patent No. 6239110|
| Patent INFORMATION:
| APPLICANT: Krieg et al.,
| TITLE OF INVENTION: IMMUNOSTIMULATORY NUCLEIC ACID MOLECULES
| NUMBER OF SEQUENCES: 111
| CORRESPONDENCE ADDRESS:
| ADDRESSEE: Fish & Richardson P.C. |
| STREET: 4225 Executive Square, Suite 1400 |
| CITY: La Jolla |
| STATE: CA |
| CONTRY: USA |
| CONTRY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Schort, Heather L.
APPLICANT: Schort, Joachim
APPLICANT: Schort, Joachim
APPLICANT: Krieg, Arthur W.
TITLE OF INVENTION: Unmethylated CpG Dinucleotide as an Adjuvant
FILE RPERENCE: C1039/7025/HCL
CURRENT APPLICATION NUMBER: US/09/325,193A
CURRENT FILING DATE: 1999-06-03
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: ASCIII ext
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/960,774
FILING DATE: 30-October-1997
CLASSIFICATION S14
PRIOR APPLICATION DATA:
APPLICATION NUMBER: U.S. Serial No. 6239116 08/738,652
FILING DATE: October 30, 1996
CLASSIFICATION: 314
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REFERENCE/DOCKET NUMBER: 08918/012001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5090
TELEPHONE: 619/678-5090
TELEPHONE: 619/678-5090
TELEPAX: 619/678-5090
TELEPAX: 19 base pairs
TYPE: nucleic acid
STRANDENNESS: single
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               Indels
               5;
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               0; Mismatches
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                                                                                                                                                      1 GGGGTCAACGTTGACGGGG 19
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               17; Conservative
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               Matches
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Sequence 16960, Application US/09949016
; Sequence 16960, Application US/09949016
; Sequence 16960, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
    APPLICANT: VENTER, J. Craig et al.
    APPLICANT: VENTER, J. Craig et al.
    APPLICANT: VENTER PREVENCE: CLOOKINGON OF DETECTION AND USES THEREOF
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; PRIOR RPLICATION NUMBER: 60/241,755
; PRIOR PAPLICATION NUMBER: 60/247,768
; PRIOR APPLICATION NUMBER: 60/237,768
; PRIOR FILING DATE: 2000-10-03
; PRIOR PLING DATE: 2000-10-03
; PRIOR FILING DATE: 2000-10-03
; PRIOR PLING DATE: 2000-10-03
; RIOR FILING DATE: 2000-10-03
; RIOR PRIOR DATE: 2000-10-03
; SEQ ID NO: 207012
; SOFTWARE: FESSEE FOR WINDOWS VERSION 4.0
; SEQ ID NO 16560
; LENGTH: 31713
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Score 15.8; DB 3; Length 19;
Pred. No. 1.4e+02;
0; Mismatches 2; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Haeneler, Jean
TITLE OF INVENTION: Immunostimulant Emulsion
FILE REFERENCE: 01-125
CURRENT APPLICATION NUMBER: US/09/786,532
CURRENT FILING DATE: 2001-06-27
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin version 3.0
SEQ ID NO 2
LUNGTH: 20
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Query Match
Best Local Similarity 85.03
Matches 17; Conservative
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; NAME/KEY: CDS
; LOCATION: (54)..(4424)
US-09-774-528-217
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APPLICANT:
APPLICANT:
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APPLICANT:
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APPLICANT:
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Sequence 75755, Application US/09949016

Batent No. 6812339

GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

FILE REPERENCE: CL001307

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT FILING DATE: 2000-04-14

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTHARE: FESTENCE FESTENCE OF WINDOWS Version 4.0

LENGTH: 601

LENGTH: 601
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1 Sequence 75758, Application US/09949016

1 Sequence 75758, Application US/09949016

2 Sequence 75758, Application US/09949016

3 Fatern No. 6812339

3 GENERAL INFORMATION:

4 APPLICANT: VENTER, J. Craig et al.

7 TILLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

7 TILLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

7 CURRENT APPLICATION NUMBER: 60/241,755

PRIOR PELICATION NUMBER: 60/241,755

PRIOR PELICATION NUMBER: 60/237,768

PRIOR PELICATION NUMBER: 60/237,768

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-10-03
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                                                                                                                                               Query Match 76.0%; Score 15.2; DB 4; Length 20; Best Local Similarity 85.0%; Pred. No. 2.8e+02; Matches 17; Conservative 0; Mismatches 3; Indels
                                                FEATURE:
; OTHER INFORMATION: synthesized sequence
US-09-786-532-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238 GGGGACAACGATCAGGGGTG 219
                                                                                                                                                                                                                                                        1 GGGGTCAACGTTCAGGGGG 20
                                                                                                                                                                                                                                                                                      1 GGGGTCAACGTTCAGGGGGG 20
TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-949-016-75755/c
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-949-016-75755
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                                                                                                                                                                                                                                                                                                                                                                                  No. 6743619el Nucleic Acids and
Score 15.2; DB 4;
Pred. No. 3.8e+02;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 15.2; DB 4;
Pred. No. 4.5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Drmanac, Radoje T.
TITLE OF INVENTION: No. 6443619el Nucleic A.
TITLE OF INVENTION: Polypeptides
TITLE REFERENCE: 802
CURRENT APPLICATION NUMBER: US/09/774,528
CURRENT FILING DATE: 2001-01-30
NUMBER OF SEQ ID NOS: 441
SEQ ID NO 217
                                                                                                                                               Sequence 217, Application US/09774528 Setent No. 6743619 GENERAL INFORMATION:
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                                                                                  238 GGGGACAACGATCAGGGGTG 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGGGTCAACGTTCAGGGGG 20
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
    76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 76.0%;
Best Local Similarity 85.0%;
Matches 17; Conservative (
                                                                                                                                                                                         Tang, Y. Tom
Zhou, Ping
Goodrich, Ryle
Liu, Chenghua
Asundi, Vinod
Ren, Feiyan
Zhang, Jie
Zhao, Qing A.
Yang, Yonghong
Xue, Aidong J.
Wehrman, Tom
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Wang, Dunrui
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Query Match
Best Local Similarity 85.0%
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; ORGANISM: Human
US-09-949-016-13937
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ORGANISM: Human
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1 Sequence 4, Application US/09027169

1 Sequence 4, Application US/09027169

2 Fatent No. 642024

3 Fatent No. 642024

3 FATEL INFORMATION:

APPLICANT: CRAIG, NANCY L

TITLE OF INVENTION: ATP-DEPENDENT TRANSPOSITION PROTEINS

NUMBER OF SEQUENCES: 15

CORRESSONDENCE ADDRESS: 15

CORRESSONDENCE ADDRESS: 15

COUNTRY: 0SA

ZIP: A10

ZIP: 2760

COUNTRY: USA

ZIP: 1760

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                CURRENT APPLICATION DATA:

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/027,169

FILING DATE:

CLASSIFICATION: 435

ATTONREY/AGENT INPORMATION:

NAME: BECOMI, Anne

REGISTRATION NUMBER: 36,463

REFERENCE/POCKET NUMBER: 36,463

TELEPHONE: 919 420 2205

TELEPHONE: 919 881 3175

INPORMATION FOR SEQ ID NO: 3:

SEQUENCE CHRARACTERISTICS:

SEQUENCE CLARARCTERISTICS:

SECONTRIBUTH: 10.72.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 76.0%; Score 15.2; DB 3; Best Local Similarity 85.0%; Pred. No. 4.5e+02; Matches 17; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid_
STRANDEDNESS: single
STRANDEDNESS: circular
MOLECULE TYPE: ocher nucleic acid
DESCRIPTION: /desc = "pEm delta R.adj to 1"
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DESCRIPTION: /desc = "pEM-delta"
PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGGGTCAACGTTCAGGGGGG 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 5926 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
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Sequence 1937, Application US/09949016
; Sequence 1937, Application US/09949016
; Patent No. 601239
; GENERAL INFORMATION:
; APPLICANT: VEYTER, J. Craig et al.
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
; TITLE OF INVENTION: WIMBER: US/09/949,016
; CURRENT APPLICATION NUMBER: 60/241,755
; PRIOR APPLICATION NUMBER: 60/241,755
; PRIOR FILING DATE: 2000-10-03
; PRIOR PRILING DATE: 2000-10-03
; PRIOR PRILING DATE: 2000-10-03
; PRIOR FILING DATE: 2000-09-08
; NUMBER OF SEQ ID NOS: 207002
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 19377
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Sequence 13936, Application US/09949016

Patent No. 681233

Patent No. 681233

Fatent No. 681233

GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: POLYMORPHISMS; IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

FILE REPERENCE: CL001307

CURRENT APPLICATION NUMBER: 06/241,755

PRIOR APPLICATION NUMBER: 60/231,768

PRIOR PILING DATE: 2000-10-03

PRIOR PILING DATE: 2000-10-03

PRIOR PILING DATE: 2000-10-03

PRIOR PILING DATE: 2000-06

NUMBER OF SEQ ID NOS: 2007012

SOFTWARE: PRESES FRESCE OF Windows Version 4.0

SEQ ID NO 13398
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Score 15.2; DB 3;
Pred. No. 4.5e+02;
0; Mismatches 3;
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     76.0%;
85.0%;
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Best Local Similarity 85.03
Matches 17; Conservative
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Best Local Similarity 85.0
Matches 17; Conservative
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RESULT 29
US-09-248-796A-7911/C
Sequence 7911, Application US/09248796A
Fatent No. 6747137
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAT:
TITLE OF INVENTION: NUCLEIC ACID AND THERAPEUTICS
TITLE OF INVENTION: USO DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: USO DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: USO DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US 60/074,725
FRICH REPLIANG DATE: 1998-02-13
FRICH FILING DATE: 1998-08-13
FRICH RILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 7911
                                                                                                                                                         Sequence 17590, Application US/09949016
; Sequence 1750, Application US/09949016
; Batent No. 681239
; GENERAL INFORMATION:
; TAPLICANT: VENTER, J. Craig et al.
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
; TITLE OF INVENTION: WINSER: US/09/949,016
; TITLE OF INVENTION: WINSER: US/09/949,016
; CURRENT FILING DATE: 2000-04-14
; CURRENT FILING DATE: 2000-10-20
; PRIOR FILING DATE: 2000-10-20
; PRIOR APPLICATION NUMBER: 60/231,768
; PRIOR APPLICATION NUMBER: 60/231,498
; PRIOR APPLICATION NUMBER: 60/231,498
; PRIOR PRIOR DATE: 2000-10-00
; RIGHT APPLICATION NUMBER: 60/231,498
; RIGH PRIOR DATE: 2000-10-00
; RIGHT APPLICATION NUMBER: 60/231,498
; RIGHT APPLICATION NUMBER: 60/
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Pred. No. 5.4e+02;
0; Mismatches 2;
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85.0%; Pred. No. 5.9e+02;
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US-09-489-039A-2912/c
Sequence 2912, Application US/09489039A
; Patent No. 6610836
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Best Local Similarity 88.9%;
Matches 16; Conservative (
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Best Local Similarity 85.0 Matches 17; Conservative
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US-09-949-016-17590
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US-09-949-016-15733

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is gequence 15733, Application US/09949016

j Patent No. 681239

is gequence 15733, Application US/09949016

general information.

interpretation of the properties of the properties of the properties of invention.

ittle OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF TILLE REPERENCE: CLO01307

CURRENT APPLICATION NUMBER: 60/241,755

PRIOR PELING DATE: 2000-10-20

PRIOR PELING DATE: 2000-10-20

PRIOR APPLICATION NUMBER: 60/231,768

PRIOR PELING DATE: 2000-10-20

PRIOR PILING DATE: 2000-10-20

PRIOR PELING DATE: 2000-10-30

PRIOR FILING DATE: 2000-10-30

SPIOR PELING DATE: 2001-10-30

PRIOR PELING DATE: 2001-10-30

SPIOR PELING DATE: 2001-10-30

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; OTHER INFORMATION: n = A, T, C or G
US-09-949-016-15733
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ORGANISM: Human
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ORGANISM: Human
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GENERAL INFORMATION:

APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PREUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT PELLION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 2912
LENGTH: 324
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CRGANISM: Klebsiella pneumoniae
US-09-489-039A-2912
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US-10-888-195-19

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US-10-995-199

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(cgn2_6)ptodata/1/pubpna/USO6_PUBCOMB.seq:*

(cgn2_6)ptodata/1/pubpna/USO10_PUBCOMB.seq:*

(cgn2_6)ptodata/1/pubpna/USO10_PUBCOMB.seq:*
              5.1.6
Compugen Ltd
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US-10-789-051-1
US-10-690-495-1
US-10-788-191-1
US-10-789-536-1
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                                     100.0%; Score 20; DB 10; Length 20; 100.0%; Pred. No. 2.7;
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APPLICANT: Krieg, Arthur M.
APPLICANT: Steinberg, Alfred D.
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMUNMODULATORY OLIGONUCLEOTIDES
FILE REPERENCE: CLO39/7029
CURRENT APPLICATION NUMBER: US/10/631,676
CURRENT APPLICATION NUMBER: US/10/631,676
FRIOR APPLICATION NUMBER: US 08/386,063
PRIOR FILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
IENGTH: 20
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APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: INWUNOMOULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/789,051
CURRENT FILING DATE: 2004-02-26
PRIOR APPLICATION NUMBER: US 08/386,063
PRIOR FILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FASTEEQ for Windows Version 3.0
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; OTHER INFORMATION: Synthetic oligonucleotide
US-10-631-676-1
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. OTHER TOTHER TIN-COLIGONUCLECTION US.10-789-051-1
                                                                              Mismatches
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Publication No. US20040142469A1
GENERAL INFORMATION:
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Best Local Similarity 100.
Matches 20; Conservative
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Best Local Similarity 100.
Matches 20; Conservative
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US-09-931-583-1
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Publication No. US20030050263A1

GENERAL INFORMATION:

APPLICANT: Krieg, Arthur

APPLICANT: Kinman, Dennis

APPLICANT: Steinberg, Alfred

TITLE OF INVENTION: Methods and Products for Treating HIV Infection

FILE REFERENCE: C1039/1053 (HCL)

CURRENT APPLICATION NUMBER: US/09/931,583

CURRENT APPLICATION NUMBER: US/09/931,583

PRIOR FILING DATE: 1994-07-15

PRIOR FILING DATE: 1994-07-15

PRIOR FILING DATE: 1999-10-09

NUMBER OF SEQ ID NOS: 75

SEQ ID NO 1

LENGTH: 20
                                                                              Sequence 518,
Sequence 495,
Sequence 518,
Sequence 518,
Sequence 518,
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Publication No. US20030026782A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMINOMODULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/09/415,142
CURRENT APPLICATION NUMBER: US 08/386,063
FRIOR FLING DATE: 1995-02-07
SEQ ID NO: 27
SEQ ID NO: 1
LENGTH: 20
US-10-314-578-1004
US-10-831-778-1004
US-11-056-463-156
US-09-776-479-518
US-09-776-479-518
US-10-112-653-495
US-10-017-995-518
US-10-314-578-518
US-10-314-578-518
US-10-194-035-46
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OTHER INFORMATION: Synthetic Oligonucleotide
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ORGANISM: Artificial Sequence
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ORGANISM: Artificial Sequence
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Matches 20; Conserv
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Publication No. US20040162258A1

GENERAL INFORMATION:

APPLICANT: Krieg, Arthur M.

APPLICANT: Krieman, Dennis

APPLICANT: Steinberg, Alfred D.

TILE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES

FILE REFERENCE: C1039/7029

CURRENT APPLICATION NUMBER: US/10/769,626

CURRENT APPLICATION NUMBER: US 08/386,063

PRIOR PILING DATE: 1995-02-07

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 1

LENGTH: 20
                   GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
APPLICANT: Krieg, Arthur M.
APPLICANT: Steinberg, Alfred D.
TILLE OF INVENTION: IMMUNOMOULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/789,536
CURRENT FILING DATE: 2004-02-26
FRIOR APPLICATION NUMBER: US 08/386,063
FRIOR PILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
ILENGTH: 20
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APPLICANT: Stainberg, Alfred D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
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100.0%; Score 20; DB 19;
Best Local Similarity 100.0%; Pred. No. 2.7;
Matches 20; Conservative 0; Mismatches 0;
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100.0%; Pred. No. 2.7;
iive 0; Mismatches 0;
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Publication No. US20040162262A1
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
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ORGANISM: Artificial Sequence
Publication No. US20040152657A1
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Matches 20; Conservative
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US-10-789-353-1
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Pred. No. 2.7;
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APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
FILE REPERROR: C1019/7029
CURRENT APPLICATION NUMBER: US/10/788,191
CURRENT FILING DATE: 2004-02-26
FRIOR PULLOGATION NUMBER: US 08/386,063
PRIOR FILING DATE: 1955-02-07
NUMBER OF SEQ ID NOS: 27
SOUTWARE: FREUSEQ for Windows Version 3.0
                                                                                                                                 Sequence 1, Application US/10690495
Fublication No. US20040143112A1
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMNOMODULATORY OLICONUCLEOTIDES
TITLE OF INVENTION: IMMNOMODULATORY OLICONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/690,495
CURRENT FILING DATE: 2003-10-21
PRIOR APPLICATION UNMBER: US 08/386,063
PRIOR APPLICATION NUMBER: 203-207
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
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US-10-788-191-1
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Publication No. US20040152656A1
GENERAL INFORMATION:
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Best Local Similarity 100.0%;
Matches 20; Conservative 0
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US-10-788-191-1
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2.7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/10787737;
Publication No. US20040171150A1
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
APPLICANT: Krieg, Alfred D.
TITLE OF INVENTION: IMMNOMOUULATORY OLIGONUCLEOTIDES;
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/787,737
CURRENT PILING DATE: 2004-02-26
PRIOR APPLICATION NUMBER: US 08/386,063
SOFTWARE: PSEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Krieg, Arthur M.
APPLICANT: Klinman, Dennis
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMUNOMOULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/788,199
CURRENT FILING DATE: 2004-02-26
FRIOR FILING DATE: 1995-02-07
FRIOR FILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
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// OTHER INFORMATION: Synthetic oligonucleotide
US-10-787-737-1
                                                                                                                                                                                                                         ; OTHER INFORMATION: Synthetic oligonucleotide US-10-789-353-1
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100.0%; Score 20; DB
Best Local Similarity 100.0%; Pred. No. 2.7
Matches 20; Conservative 0; Mismatches
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                                                                               NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 20
CURRENT APPLICATION NUMBER: US/10/789,353
                 CURRENT FILING DATE: 2004-02-26
PRIOR APPLICATION NUMBER: US 08/386,063
PRIOR FILING DATE: 1995-02-07
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Publication No. US20040181045A1
GENERAL INFORMATION:
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ORGANISM: Artificial Sequence
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Best Local Similarity 100.
Matches 20; Conservative
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                                                                                         Score 20; DB 19; Length 20;
Pred. No. 2.7;
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APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Steinberg, Alfred D.
TILLE OF INVENTION: INWUNMODULATORY OLIGONUCLEOTIDES
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/847,650
CURRENT APPLICATION NUMBER: US/847,650
PRIOR APPLICATION NUMBER: US/86,063
PRIOR PILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 20
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100.0%; Pred. No. 4.
                                            ) OTHER INFORMATION: Synthetic oligonucleotide US-10-788-199-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; OTHER INFORMATION: Synthetic oligonucleotide US-10-847-650-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Synthetic oligonucleotide US-10-888-885-1
                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                   Sequence 1, Application US/10847650 Publication No. US20050004062A1 GENERAL INFORMATION:
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                                                                                           Query Match

Best Local Similarity 100.0%; Partches 20; Conservative 0;
TYPE: DNA ORGANISM: Artificial Sequence
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ORGANISM: Artificial Sequence
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Best Local Similarity 100.'
Matches 20; Conservative
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OTHER INFORMATION: Synthetic oligonucleotide
NAME/KEY: misc_feature
LOCATION: (0) ... (0)
OTHER INFORMATION: chimeric phosphorothioate/phosphodiester backbone
OTHER INFORMATION: with phosphorothioate at 5' and 3' ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 20;
100.0%; Score 20; DB 21; Length 20; llarity 100.0%; Pred. No. 2.7; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Weiner, George
APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Methods for Enhancing Antibody-Induced
TITLE OF INVENTION: Cell Lysis and Treating Cancer
FILE REFERENCE: C1019/7/1052 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT FILING DATE: 2001-06-22
RIOR APPLICATION NUMBER: US 60/213,346
NUMBER OF SEQ ID NOS: 848
SOFTWARE: FRSESEQ FOR Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Weiner, George
APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Methods for Enhancing Antibody-Induced
TITLE OF INVENTION: Cell Lysis and Treating Cancer
FILE REFERENCE: C1039/7052 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT PILING DATE: 2001-06-22
PRIOR APPLICATION NUMBER: US 60/213,346
PRIOR FILING DATE: 2000-06-22
NUMBER OF SEQ ID NOS: 848
SOFTWARE: FastSEQ for Windows Version 3.0
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COTHER INFORMATION: Synthetic oligonucleotide
NAME/KEY: misc feature
LOCATION: (0)...(0)
LOCATION: (0)...(0)
COTHER INFORMATION: phosphorothioate backbone
US-09-888-326-437
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Publication No. US20030026801A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                               ; Sequence 416, Application US/09888326; Publication No. US20030026801A1; GENERAL INFORMATION:
                                                                                                           1 GGGGTCAACGTTCAGGGGGG 20
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                               Best Local Similarity
Matches 20; Conserv
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LENGTH: 20
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LENGTH: 20
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                                                              Gaps
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APPLICANT: Klimen, Dennis
APPLICANT: Steinberg, Alfred
TITLE OF INVENTION: Methods and Products for Treating HIV Infection
FILE REFERENCE: Cloud-1009-7008440800
CURRENT APPLICATION NUMBER: US/10/649,584
CURRENT PILING DATE: 2003-08-25
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100.0%; Score 20; DB 21; Length 20;
Best Local Similarity 100.0%; Pred. No. 2.7;
Matches 20; Conservative 0; Mismatches 0; Indels
          Score 20; DB 21; Length 20; Pred. No. 2.7;
                                 2.7;
                                                                                                                                                                                                                                                                               Sequence 1, Application US/1088089;
Sequence 1, Application US/1088089;
Publication No. US20050037403A1
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES;
FILE REFERENCE: C1039/7029
CURRENT APPLICATION NUMBER: US/10/699, 495
FILE REPERIOR 2 2003-10-21
PRIOR FILING DATE: 2003-10-21
PRIOR PILING DATE: 1995-02-07
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FRESEQ for Windows Version 3.0
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; OTHER INFORMATION: Synthetic Oligonucleotide
US-10-649-584-1
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               Query Match 100.0%; Score 20; DE
Best Local Similarity 100.0%; Pred. No. 2.7
Matches 20; Conservative 0; Mismatches
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PRIOR APPLICATION NUMBER: US 09/931,583
PRIOR PILING DATE: 2001-08-16
PRIOR PILING DATE: 1994-07-15
PRIOR PLING DATE: 1994-07-15
PRIOR APPLICATION NUMBER: US 09/415,142
PRIOR PILING DATE: 1999-10-09
NUMBER OF SEQ ID NOS: 74
SOFTWARE: PATENTIN VERSION 3.0
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Publication No. US20050037985A1
GENERAL INFORMATION:
                                                                                                                     1 GGGGTCAACGTTCAGGGGGG 20
                                                                                                                                             1 GGGGTCAACGTTCAGGGGGG 20
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LENGTH: 20
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LENGTH: 20
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L Similarity 95.0%; Pred. No. 18; 19; Conservative 0; Mismatches
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                                                                1 GGGGTCAACGTTCAGGGGGG 20
Best Local Similarity
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US-09-776-479-767
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US-09-776-479-968
                        Matches
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Sequence 519, Application US/09776479

Publication No. US20030087848A1

GENERAL INFORMATION:

APPLICANT: Bratzler, Robert L.

APPLICANT: Pouron, Yves

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: Treatment of Asthma and Allergy FILE REFERENCE: C1037/7013 (HCL/MAT)

CURRENT APPLICATION NUMBER: US/09/776,479

CURRENT PILING DATE: 2001-02-02

PRIOR FILING DATE: 2000-02-03

NUMBER OF SEQ ID NOS: 1093

SEQ ID NO 5:9
                                                                                                                                                                                                                                                                                                                APPLICANT: Kline, Joel N.
APPLICANT: Kline, Joel N.
APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules
FILE REFERENCE: C1039/7048 (AMS)
CURRENT APPLICATION NUMBER: US/09/818,918
CURRENT FILING DATE: 1994-07-15
PRIOR APPLICATION NUMBER: US 08/276,358
PRIOR APPLICATION NUMBER: US 08/276,358
PRIOR APPLICATION NUMBER: US 08/276,358
PRIOR FILING DATE: 1995-02-07
PRIOR FILING DATE: 1995-02-07
PRIOR FILING DATE: 1996-10-30
NUMBER OF SEQ ID NOS: 56
SOFTWARE: FastSEQ for Windows Version 3.0
LENGTH: 20
    Length 20;
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                                            Indels
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92.0%; Score 18.4; DB 10;
95.0%; Pred. No. 18;
iive 0; Mismatches 1;
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95.0%; Pred. No. 18;
tive 0; Mismatches
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                                                                                                                                                                                                                                  Sequence 12, Application US/09818918
Publication No. US20030050261A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GGGGTCAACGTTCAGGGGGG 20
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ORGANISM: Artificial Sequence
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Query Match
Best Local Similarity 95.0
Matches 19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 95.0
Matches 19; Conservative
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US-09-776-479-519
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92.0%; Score 18.4; DB 10; Length 20;

Query Match

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Sequence 767, Application US/09776479

Sequence 767, Application US/09776479

Publication No. US2000087848A1

GENERAL INFORMATION:

APPLICANT: Brataler, Robert L.

APPLICANT: Brataler, Robert L.

APPLICANT: Petersen, Deanna M.

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: UNMBER: US/09/776,479

CURRENT APPLICATION NUMBER: US 60/179,991

PRIOR FILING DATE: 2000-02-03

NUMBER OF SEQ ID NOS: 1093

SEQ ID NO 767

LENGTH: 20
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; Sequence 968, Application US/09776479
; Publication No. US20030087848A1
; GENERAL INFORMATION:
; APPLICANT: Brataler, Robert L.
; APPLICANT: Petersen, Deanna M.
; APPLICANT: Petersen, Deanna M.
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; FILE REFERENCE: C1037/7013 (HCL/MAT)
; CURRENT APPLICATION NUMBER: US/09/776,479
; CURRENT FILING DATE: 2001-02-02
; PRIOR PELLING DATE: 2000-02-03
; NUMBER OF SEQ ID NOS: 1093
; SEGTWARE FEASESE FOR Windows Version 3.0
; ENGTHA: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 20;
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Pred. No. 18;
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Best Local Similarity 95.0%;
Matches 19; Conservative (
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Best Local Similarity
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US-09-776-479-767
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LENGTH: 20
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| Sequence 3, Application US/09967464
| Publication No. US20030138453A1
| GENERAL INFORMATION:
| APPLICANT: O'Hagan, Derek
| APPLICANT: Donnelly, John M. APPLICANT: Donnelly, John M. APPLICANT: Barnett, Susan
| APPLICANT: Singh, Mamohan
| APPLICANT: Singh, Mamohan
| APPLICANT: Singh, Manohan
| APPLIC
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                                                                                                                                                                                                                                                                  GENERAL INFORMATION:

APPLICANT: Bratzler, Robert L.

APPLICANT: Bratzler, Robert L.

APPLICANT: Petersen, Deanna M.

APPLICANT: Petersen, Deanna M.

APPLICANT: Petersen, Deanna M.

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for Windows Version 3.0

SOFTWARES: PastSEQ for Windows Version 3.0

LENGTH: 20
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Pred. No. 18;
0; Mismatches 1; Indels
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92.0%; Score 18.4; D
Best Local Similarity 95.0%; Pred. No. 18;
Matches 19; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , OTHER INFORMATION: Synthetic Sequence US-09-776-479-969
                                                                                                                                                                                                    Sequence 969, Application US/09776479 Publication No. US20030087848A1
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1 GGGGTCAACGTTGAGGGGGG 20
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Best Local Similarity 95.0%;
Matches 19; Conservative
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Sequence 519, Application US/09776479

Sequence 519, Application US/09776479

Sequence 519, Application US/09776479

Sequence 519, Application US/0902A9

GENERAL INFORMATION:

APPLICANT: Bractaer, Robert L.

APPLICANT: Fouron, Yves

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: Treatment of Asthma and Allergy FILE REFERENCE: C1037/7013 (HCL/MAT)

CURRENT FILING DATE: 2001-02-02

PRIOR APPLICATION NUMBER: US 60/179,991

PRIOR PILING DATE: 2000-02-03

NUMBER OF SEQ ID NOS: 1093

SOFTWARE: FRACEO for Windows Version 3.0

TENCINE. OF SEQ ID NOS: 1093
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APPLICANT: Petersen, Deanna M.
APPLICANT: Petersen, Deanna M.
APPLICANT: Petersen, Deanna M.
TILE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: Treatment of Asthma and Allergy
TITLE OF INVENTION: Treatment of Asthma and Allergy
FILE REPERBENCE: 01037/7013 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/776,479
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: US 60/179,991
PRIOR PILING DATE: 2000-02-03
NUMBER OF SEQ ID NOS: 1093
SOFTWARE: FastSEQ for Windows Version 3.0
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Pred. No. 18;
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ORGANISM: Artificial Sequence
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Matches 19; Conservative
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Krieg, Arthur M. Schorr, Joachim
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; Sequence 969, Application US/09776479
; Publication No. US20040067902A9
; GENERAL INFORMATION:
; APPLICANT: Bataler. Robert L.
; APPLICANT: Petersen, Deanna M.
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; CURRENT APPLICATION NUMBER: US/09/776,479
; CURRENT FILING DATE: 2001-02-02
; PRIOR FILING DATE: 2000-02-03
; NUMBER OF SEQ ID NOS: 1093
; SEQ ID NO 969
; SEQ ID NO 969
                Sequence 968, Application US/09776479
; Publication No. US20040067902A9
; GENERAL INFORMATION:
; APPLICANT: Bratzler, Robert L.
; APPLICANT: Petersen, Deanna M.
; APPLICANT: FOURON, Ywes
; TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the
; TITLE OF INVENTION: Treatment of Asthma and Allergy
; FILE REFERENCE: C1037/7013 (HCL/MAT)
; CURRENT APPLICATION NUMBER: US/09/776,479
; CURRENT FILING DATE: 2001-02-02
; PRIOR FILING DATE: 2000-02-03
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95.0%; Pred. No. 18;
tive 0; Mismatches 1;
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 968
LENGTH: 20
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Publication No. US20040186067A1
GENERAL INFORMATION:
APPLICANT: Davis, Heather L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GGGGTCAACGTTCAGGGGG 20
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ORGANISM: Artificial Sequence
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Matches 19; Conserve
  US-09-776-479-968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-776-479-968
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US-09-776-479-969
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(US-09-965-101-59
(Sequence 59, Application US/09965101
(Seneral INPORMATION:
(SENERAL INPORMATION:
(SENERAL INPORMATION:
(APPLICANT: Davis, Heather L.)
(APPLICANT: Krieg, Arthur M.)
(APPLICANT: Schorr, Joachim
(APPLICANT: Wu, Tong
(TITLE OF INVENTION: Vectors and Methods for Immunization or TITLE OF INVENTION: Vectors and Methods for Immunization or TITLE OF INVENTION: Vectors and Methods for Immunization or TITLE OF INVENTION: Vherapeutic Protocols
(TITLE REPRENCE: C1039/7057 (HCL/MAT)
(TITLE OF INVENTION: VHORER: US/09/965,101
(TURRINT APPLICATION NUMBER: US/09/09/65,101
(TURRINT FILING DATE: 1998-05-20
(PRIOR FILING DATE: 1998-05-20
(PRIOR FILING DATE: 1997-05-20
(MUMBER OF SEQ ID NOS: 84
(SOFTWARE: FastSEQ for Windows Version 3.0)
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APPLICANT: Wu, Tong
TITLE OF INVENTION: Vectors and Methods for Immunization or
TITLE OF INVENTION: Vectors and Methods for Immunization or
TITLE OF INVENTION: Therapeutic Protocols
FILE REFERENCE: C1039/7057 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/965,101
CURRENT APPLICATION NUMBER: US 09/082,649
PRIOR FILING DATE: 1998-05-20
PRIOR FILING DATE: 1998-05-20
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PRIOR FILING DATE: 1997-05-20
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 52
LENGTH: 20
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US-09-965-101-52
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Best Local Similarity 95.0%; Pred. No. 18;
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1; Indels
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; OTHER INFORMATION: Synthetic Oligonucleotide US-10-112-653-496
0; Mismatches
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Search completed: September 3, 2005, 10:09:04 Job time : 587.286 secs

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(c) 1993 - 2005 Compugen Ltd.
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ALIGNMENTS

CF387591 CF470486 CO363295 CO475559 CO201388 CO362388 CF386784 CF386784 CF386197

RESULT 1 BX678404/c

NXXV108 E RTDR3 8 B 23H4 Fine NXXV 130

CF392169 AI813183 AW985091

BE431401

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/dev_stage="addit"
/clone lib="Pinus pinaster differenciating xylem adult"
/clone lib="Pinus pinaster differenciating xylem adult"
/note="vector: Uni-Zap XR lambda (Stratagene); Site_l: Eco
RI; Site_2: Xho I; A composite cDNA library was made with
mRNA isolated from normal, compression, opposite, early
and late wood of Maritime pine uni-directionally cloned
into Uni-ZAP XR using the ZAP-CDNA Synthesis kit
(Stratagene): pBluescript SK(-) plasmids were obtained by
in vivo mass excision: The nucleotide sequence of the
5'end was obtained by autcomated sequence of the
5'end was obtained by autcomated sequencing with the T3
primer by GENOME EXPRESS, Meylan, France"
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Sasaki,N., Izawa,M., Watahiki,M., Ozawa,K., Tanaka,T., Yoneda,Y.,
Anatoura,S., Carninci,P., Muramatsu,M., Okazaki,Y. and
Hayashizaki,Y.
Transcriptional sequencing: A method for DNA sequencing using RNA
ploymerase. Proc. Natl. Acad. Sci. U.S.A. 95 (7), 3455-3460 (1998)
Itoh,M., Kiteumai,T., Shibata,K., Izawa,M., Kawai,J.,
Tomaru,Y., Carninci,P., Shibata,Y., Ozawa,Y., Muramatsu,M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan Tel: 81-45-503-9226
Fax: 81-45-503-9216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AV294749

AV294749 RIKEN full-length enriched, 6 days embryo Mus musculus cDNA clone 5630401A06 3' similar to AJ011304 Homo sapiens mRNA for sphingosine-1-phosphate lyase, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92.0%; Score 18.4; DB 5; 95.0%; Pred. No. 1.5e+02; cive 0; Mismatches 1;
                                                                                                                                                                                               /mol_type="mRNA"
/strain="ecotype: Corsican"
                                                                                                                                                          organism="Pinus pinaster"
                  Email: Frigerio@pierroton.inra.fr
Email: Frigerio@pierroton.inra.fr.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGTCAACGTGCAGGGGGG 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (house mouse)
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                                                                                        FEATURES
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/clone_libe_KSG...
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/clone_libe_KSG...
/note="Vector: Uni-ZAP XR; ecotype: Landes; The library was made from the roots of 6 weeks old seedlings grown in hydroponic conditions. A three weeks drought stress treatment was applied by lowering the osmotic potential of the nutrient solution to -0.45 MPa using 170 g/l of genotypes were used. Oligo-dT primed cDNA was directionally cloned into the EcoRI-XhoI lambda-ZAP vector arms and mass-excised to form a pBluescript phagemid"
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                         EST 28-OCT-2003
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                                                                                                                                                                                                                                                              Eukaryophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Confferopsida; Coniferales; Pinaceae; Pinus; Pinus. I thasea: 1 to 414)
Frigerio,J. and Plomion,C.
Identification of water-deficit responsive genes in Maritime pine (Pinus pinaster Ait.) using an EST approach
Contact: Frigerio JM
Genetique et Amelioration 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryoping Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Coniferopeida, Coniferales, Pinaceae, Pinus, I. (basea I to 58).

Canton, F.R., Le Provost, G., Garcia, V., Barre, A., Frigerio, J.-M., Paiva, J., Fevereiro, P., Avila, C., Mouret, J.-F., Brach, J., de Darvar, A., Canovas, F.M. and Plomion, C.

Transcriptome analysis of wood formation in maritime pine Unpublished (2003)
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bx6/8404 BX Pinus pinaster cDNA clone RS08F09, mRNA sequence.
BX6/8404
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/dev stage="6 weeks old seedling"
/lab_host="SOLR"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Pinus pinaster"
/mol_type="mRNA"
/db_xref="taxon:71647"
/clone="RS08F09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: Frigerio@pierroton.inra.fr
Email: Frigerio@pierroton.inra.fr
Seq primer: T3.
Location/Qualifiers
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Matches 19; Conservative
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BX253788/c
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Gaps .. 0

Length 558;

EST 10-NOV-1999

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CG143495 GP.0_1.0_KB Zea mays genomic clone ZMMBTa0584L09,
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Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Zea.
1 (bases 1 to 692)
Whitelaw(C.A., Quackenbush,J., Van Aken,S., Utterback,T.,
Besnick,A., Fraser,C.M., Yuan,Y., San Miguel,P., Ma,J. and
Bennetzen,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db xref="taxon:4577"
/clone="ZMMBTa0584L09"
/clone 11b="ZM 0-6.1.0 KB"
/clone 11b="ZM 0-5.1.0 KB"
/clone 15p="WetCor: pCR4-T0F0; Site 1: BcoRI; 0.6-1.0 kb high
Cor selected genomic DNA library"
                                                                            /db_xref="taxon:34305"
/db_xref="taxon:34305"
/clone="MPD03640 f"
/tissue type="Pods (20-30 mm in length)"
/clone_lib="Lotus japonicus Pods (20-30 mm in length)"
/note="Vector: pBluescriptil SK-; Site_1: EcoRi; Site_2:
Xho!"
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1. .437
/organia="Lotus corniculatus var. japonicus"
/organia="MRNA"
/isolate="Miyakojima_MG-20"
                                                                                                                                                                                                                                                                             Length 437;
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Fax: 301-838-0208
Email: whitelaw@tigr.org
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Pred. No. 4.8e+02;
); Mismatches 1;
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Pred. No. 5.1e+02;
0; Mismatches 1;
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/strain="B73"
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/organism="Zea mays"
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Unpublished (2003)
Other GSSs: PUIHM65TD
Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                               95 GGCTCAACGTTCAGGGGG 113
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CG143495.1 GI:34034278
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94.7%;
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Best Local Similarity 94.7%;
Matches 18; Conservative
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Best Local Similarity
Matches 18; Conserv
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                                                                                                                                                                                                                                                                                                                                                                     /dev stage="6 days embryo"
//dev stage="6 days embryo"
//lab_host="Bhito"
//lab_host="Bhito"
//clone_lib="RikEN full-length enriched, 6 days embryo"
//clone_lib="RikEN full-length enriched, 6 days embryo"
//clone_lib="RikEN full-length enriched, 6 days embryo"
//note="Gite : Sal1; Site 2: BamH; cDNA library was
prepared and sequenced in Mouse Genome Encyclopedia
Project of Genome Exploration Research Group in Riken
Genomic Sciences Center and Genome Science Laboratory in
RIKEN. Division of Experimental Animal Research in Riken
contributed to prepare mouse tissues. 1st strand cDNA was
primed with a primer [5,
GAGAGAGAGACCCAAGAGCTCTTTTTTTTTTTTTTV 3'], cDNA was
prepared by using trehalose thermo-activated reverse
transcriptase and subsequently enriched for full-length by
cap-trapper. cDNA went through one round of subtraction to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Asamizu, E., Nakamura, Y., Sato, S. and Tabata, S. Characteristics of the Lotus japonicus Gene Repertoire Deduced from Large-Scale Expressed Sequence Tag (EST) Analysis Plant Mol. Biol. 54 (1), 405-414 (2004)
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Kazusa DNA Research Institute
Kazusa DNA Research Institute
Yana 1532-3, Kiearazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
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Lotus corniculatus var. japonicus
Lotus corniculatus var. japonicus
Stratycus, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Loteae;
    Okazaki,Y. and Hayashizaki,Y. Automated filtration-based high-throughput plasmid preparation Automated filtration-based high-throughput plasmid preparation system. Genome Res. 9 (5), 463-470 (1999)
Carninci,P. and Hayashizaki,Y. High-efficiency full-length cDNA cloning. Methods Enzymol. 303, 19-44 (1999)
Please visit our web site (http://genome.rtc.riken.go.jp) for further details.
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AV772436 Lotus japonicus Pods (20-30 mm in length) Lotus corniculatus var. japonicus cDNA clone MPD036a10_£ 3', mRNA
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87.0%; Score 17.4; DB 1; Length 281;
Best Local Similarity 94.7%; Pred. No. 4.5e+02;
Matches 18; Conservative 0; Mismatches 1; Indels (
                                                                                                                                                                                                                                      organism="Mus musculus"
                                                                                                                                                                                                                                                                                                         db_xref="taxon:10090"
clone="5630401A06"
                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                              /mol_type="mRNA"
/strain="C57BL/6J"
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                                                                                                                                                                                                                                                                                                                                                         "sex="mixed"
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Query Match
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AQ414593
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BB629098 RIKEN full-length enriched, 16 days neonate cerebellum Mus
musculus cDNA clone 9630050J24 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Yoshihide Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suchiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9216
Fax: 81-45-503-9216
Email: genome-res@gsc.riken.in. IMPI-hff1//-----
                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus. 1 (bases 1 to 708)
Arakawa; Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, M., Hiramoto, K., Hori, F., Ishii, Y., Ito, M., Kawai, J., Konno, H., Kouda, M., Koya, S., Matsuyama, T., Miyazaki, A., Nomura, K., Ohno, M., Okido, T., Saito, R., Sakai, C., Sakai, K., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Suzuki, H., Tagami, M., Tagawa, A., Takahashi, F., Takeda, Y., Tanaka, T., Toya, T., Muramatsu, M. and Hayashizaki, Y. BIKEN Mouse ESTS (Arakawa, T., et al. 2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: genome-resegsc.riken.jp, URL:http://genome.gsc.riken.jp/
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
Itch,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. . 10 (10), 16.77-16.30 (2000)
wagi,K., Fujiwake,S., Inoue,K., TGO Qawa,Y., Izawa,M., Ohara,E.,
Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T.,
Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1711 (2000)
Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara, Y. and Hayashizaki, Y.
Computer-based methods for the mouse full-length cDNA computer-based methods for the mouse full-length cDNA norredundant cDNA library. Genome Rese. 11 (2), 281-289 (2001) Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizawa, K., Fukuda, S., Hara, A., Itoh, M., Kawai, J., Shibata, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone lib="RIKEN full-length enriched, 16 days neonate
cerebellum"
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/dev_stage="16 days neonate"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'organism="Mus musculus"
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/db_xref="taxon:10090"
/clone="9630050J24"
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                                                                                                                                                  Mus musculus (house mouse)
                                                                                            BB629098.1 GI:16466342
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                                                                                                                                                                                      Mus musculus
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RPCI-11-165M9.TV RPCI-11 Homo sapiens genomic clone RPCI-11-165M9,
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Clones are derived from the human BAC library RPCI-11. For BAC

library availability, please contact Pieter de Jong

(pieter@dejong.med.buffalo.edu). Clones may be purchased from

RacPac Resources (http://bacpac.med.buffalo.edu/ordering) or from

Research Genet cs (inf@vesgen.com). BAC end search page:

http://www.tigr.org/tdb/humgen/bac_end_search/bac_end_search.html.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

( Dases 1 to 721)
Zhao,S., Adams,M.D., Nierman,W., Malek,J., de Jong,P. and Venter,J.C.
Use of BAC End Sequences from Library RPCI-11 for Sequence-Ready
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cell_type="Lymphocytes"
/clone_lib="RPC1-11"
/note="Vector: pBACe3.6; Site_l: EcoRI; Site_2: EcoRI;
RPCII1 Human Male BAC Library"
                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                              Length 708;
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Contact: Shaying Zhao, William Nierman, Mark Adams
Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                                                                                                                                                                         1; Indels
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Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                            87.0%; Score 17.4; DB 2;
94.7%; Pred. No. 5.1e+02;
iive 0; Mismatches 1;
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/db_xref="GDB:7563272"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="RPCI-11-165M9"
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1. .721
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Sederoff, R.
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                                  BH950547 884 bp DNA linear GSS 01-OCT-2002 odil3c04.bl B.oleracea002 Brassica oleracea genomic, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="genomic DNA"
/mol_type="genomic DNA"
/db_xref="taxon:3712"
/clone_lib="B.oleracea002"
/clone_lib="B.oleracea002"
/note="Yector: pOTW13; Whole genome shotgun library from flowering buds. DNA was purified from a crude nuclear prep using Brassica oleracea Tol000DH3 buds provided by Thosmas Obborn at the University of Wisconsin. Genomic DNA was provided by Pablo Rabinowicz (CSHL) and the shotgun library prepared at Washington University Genome Sequencing Center."
                                                                                                                                                                     Brassica oleracea

Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Spermacophyta; Magnoliophyta; eudicotyledons; core eudicots;

rosids; eurosids II; Brassicales; Brassicaceae; Brassica.

I (bases I to 884)

Delehaunty,K., Fewell,G., Fulton,L., McCombie,W.R., Miner,T.,

Nash,W., Rabinowicz, P.D. and Wilson,R.K.

Whole genome shoutz reads from Brassica oleracea

Unpublished (2002)
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Makaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Coniferopsida, Coniferales, Pinaceae, Pinus,
1 (bases 1 to 223)
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An EST database from drought-stressed loblolly pine (Pinus taeda)
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Gebremedhin, M., Dervinis, C., Martin, T., White, T., Davis, J. and
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Pred. No. 5.3e+02;
0; Mismatches 1;
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Washington University School of Medicine
Bail: submissions@watson.wustl.edu .
Plate: odill row: c column: 04
Seq primer: -21UPpOT forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Brassica oleracea"
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High quality sequence stop: 279.
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                                                                                                                                                                                                                                                                                                                                                                Contact: Richard K. Wilson
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BH950547.1 GI:23431774
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                                                                                                                                                                 Brassica oleracea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Class: shotgun
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1. .223
| organism="Pinus taeda" |
| organism="Pinus taeda" |
| organism="Pinus taeda" |
| wol_type="wikNa" |
| farrain="CCLONES" |
| db_xref="taxon:3352" |
| db_xref="taxon:3352" |
| clone="RTD3 21 G04 A022" |
| lab_nost="DH10B-T1 phage-resistant E. coli" |
| lab_nost="DH10B-T1 phage-resistant E. coli" |
| clone="tarought-stressed loblolly pine roots DS3" |
| clone="tarought-stressed loblolly pine roots DS3" |
| clone lib_rary was prepared from polyth-RNA from drought-stressed loblolly pine (Finus taeda) roots. Water was withheld from ramet clones until predawn needle water potential reached -1.75 MPa. On day 7 roots were harvested for RNA isolation. Double-stranded cDNA was cloned unidirectionally into pSilliBO. Inserts excised with ECORI (5' end) and Xhol (3' end)."
                                                                                                                                                                                   Email: mmpratt@uga.edu
RNA prepared and library constructed by W. Walter Lorenz, School of
RNA prepared and library constructed by W. Walter Lorenz, School of
Forestry, University of Georgia; plant material prepared at the
University of Florida; sequencing done in the Laboratory for
Genomics and Bioinformatics, University of Georgia. Sequence ends
have been trimmed to exclude vector and regions below Phred quality
16. Three-prime sequences are presented as their reverse complement
and have been trimmed to exclude polyA.
Seq primer: JENREV (CAGGAAACAGCTATGACC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Molecular Basis of Wood Formation in the Pine Megagenome Unpublished (2000)
Contact: Sederoff, Ron
Forest Biotechnology
North Carolina State University
840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh, NC 27695, USA
Fel: 919 515 7800
Fax: 919 515 7801
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Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Coniferopsida, Coniferales, Pinaceae, Pinus,
1 (bases 1 to 243)
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NXCI 043 C06 F NXCI (Nsf Xylem Compression wood Inclined) Finus taeda cDNA clone NXCI 043 C06 5' similar to Arabidopsis thaliana sequence At3g11660 unknown protein see
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Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
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90.0%; Pred. No. 8.7e+02;
ive 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
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Best Local Similarity 90.03
Matches 18; Conservative
                                                                                                                     Tel: 706 542 1860
Fax: 706 583 0210
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Inote="Site 1: Sal1; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia project of Genome Exploration Research Group in Riken Genomic Science Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5' GAGAGAGAGCGCCAACTCGAGTTTTTTTTTTVN 3'], cDNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 07-MAY-2003
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Contact: Sederoff, Ron Forest Biotechnology
North Carolina State University
840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
trehalose and its application for the synthesis of full length CDNA. Proc. Natl. Acad. Sci. U.S.A. 95 (2), 520-524 (1998)
Itoh, M., Kitsunai, T., Akiyama, J., Shibata, K., Izawa, M., Kawai, J., Tomaru, Y., Carninci, P., Shibata, Y., Ozawa, Y., Muramatsu, M., Okazaki, Y. and Hayashizaki, Y.
Automated filtration-based high-throughput plasmid preparation system. Genome Res. 9 (5), 463-470 (1999)
Garninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning. Methods Enzymol. 303, 19-44 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Coniferopaida; Coniferales; Pinaceae; Pinus; Pinus. 1 (bases 1 to 341)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NXNV 105 G03 F NBf Xylem Normal wood Vertical Pinus taeda cDNA clone NXNV 105 G03 5' similar to Arabidopsis thaliana sequence At3g11660 unknown protein see http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence. AM888010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="lung"
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/lab_host="DH10B"
/clone_lib="RIKEN full-length enriched, 0 day neonate
                                                                                                                                                                                                                                                                                              Please visit our web site (http://genome.rtc.riken.go.jp) for further details.
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Pred. No. 9.3e+02;
0; Mismatches 2;
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                                                                                                                                                                                                                                                                                                                                                                                                            organism="Mus musculus"
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                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="mRNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GGGGTCAACGTTCAGGGGGG 20
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Fel: 919 515 7800
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Best Local Simi
Matches 18;
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

B. (Daaes 1 to 336)

S. Konno, H., Aizawa, K., Akahira, S., Akiyama, J., Arakawa, T.,

Carninci, P., Endo, T., Pukuda, S., Fukunishi, Y., Hara, A., Hayatsu, N.,

Izawa, M., Kadota, K., Ragawa, I., Fahikawa, J., Ishikawa, T., Itoh, M.,

Izawa, M., Kadota, K., Kagawa, I., Kai, C., Kawai, J., Kikuchi, N.,

Kiyosawa, H., Kojima, Y., Kondo, S., Koya, S., Kurihara, C.,

Kusakabe, M., Matsuyama, T., Miki, R., Mizuno, Y., Nakamura, M., Oda, H.,

Okazaki, Y., Ono, T., Owa, C., Satto, H., Sakai, C., Sato, K.,

Shibata, K., Shibata, Y., Shiqemoto, Y., Shinagawa, A., Shiraki, T.,

Sogabe, Y., Sugahara, Y., Suzuki, H., Suzuki, H., Tagawa, A.,

Takahashi, F., Tominaga, N., Toya, T., Tsunoda, Y., Matahiki, A.,

Yokota, T., Yoshida, K., Yoshiki, A., Yoshino, M., Muramatsu, M. and

Hayashizaki, Y.
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XhoI; The library is from early (spring) wood, taken from
three six-year old trees (trree different genotypes), in
the juvenile phase. These trrees were induced to form
compression wood by bending to a 45 degree angle and tying
them to the ground. Differentiating xylem was harvested
from the bottoms of the inclined stems, and a mixture of
all three genotypes was used for the library. Oligo-dr
primed cDNA was directionally cloned into the EcoRI-XhoI
BlueScript SK vector arms. NOTE: The sequences contain a
'CNNA adapter' between the EcoRI site and the start of the
EST. The adapter sequence is 'AATTCGGCACGAG'."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BB532888 RIKEN full-length enriched, 0 day neonate lung Mus musculus cDNA clone E030027E02 3' similar to AF148511 Mus musculus hermes mRNA, mRNA sequence.
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Carninci.P., Nishiyama.Y., Westover,A., Itch,M., Nagacka,S.,
Sasaki,N., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Thermostabilization and thermoactivation of thermolabile enzymes by
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Unpublished (2000)
Contact: Yoshihide Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suebhiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan Tel: 81-45-503-9226
Fax: 81-45-503-9216
                                      "mol type="mRNA"
'strāin="Coastal plain loblolly pine from North Carolina"
'db_xref="taxon:3352"
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              organism="Pinus taeda
                                                                                                                          clone="NXCI 043 C06"
tissue_type="Xylem"
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NXSI 003 F12 F NXSI (Nef Xylem Side wood Inclined) Pinus taeda cDNA clone NXSI 003 F12 F S' similar to Arabidopsis thaliana sequence At3911660 unknown protein see
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/note="Vector: BlueScript SK, Site_1: Eco RI; Site_2:
XhoI; The library is from early (spring) wood, taken from
three six-year old trees (three different genotypes), in
the juvenile phase. These trees were induced to form side
wood by bending to a 45 degree angle and tying them to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sederoff,R. Molecular Basis of Wood Formation in the Pine Megagenome Molecular Basis of Wood Formation in the Pine Megagenome (2000) Contact: Sederoff, Ron Forest Biotechnology North Carolina State University North Carolina State University 840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                       /clone="NXXVV 105_G03"
/clone_lib="NBf Xylem Normal wood Vertical"
/note="Vector: BlueScript SK; Site_l: Eco RI; The
sequences contain a 'CDNA adapter' between the EcoRI site
and the start of the EST. The adapter sequence is
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/strain="Coastal plain loblolly pine from North Carolina"
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  Fax: 919 515 7801
Email: ron sederoff@ncsu.edu, jerri johnson@ncsu.edu
Please see http://web.ahc.umu.edu/biodata/nsfpine/ for further
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Please see http://web.ahc.umn.edu/blodata/nsfpine/ for further
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BF516817
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90.0%; Pred. No. 9.3e+02;
iive 0; Mismatches 2;
                                                                                                                                                 /organism="Pinus taeda"
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                                                                                     Seq primer: T3.
Location/Qualifiers
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Tel: 919 515 7800
Fax: 919 515 7801
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515 7801
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Matches 18; Conserva
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/organism="Pinus taeda"
/porganism="Pinus taeda"
/mol_type="mRNA"
/gtrain="Coastal plain loblolly pine from North Carolina"
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/lab_host="xXI-Blue"
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/lab_host="xII
ground. Differentiating xylem was harvested from the sides of the inclined stems, and a mixture of all three genotypes was used for the library. Oligo-dT primed cDNA was directionally cloned into the EcoRI-Ahol BlueScript SK between the EcoRI atte and the start of the EST. The adapter adapter sequence is 'AATTCGGCACGAG'."
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NXSI 062 B04 F NXSI (NBf Xylem Side wood Inclined) Pinus taeda cDNA clone NXSI 062 B04 S' similar to Arabidopsis thaliana sequence At2911660 unknown protein see
http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence.
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Spermatophyta; Coniferopaida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 381)
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Tel: 919 515 7800
Fax: 919 515 7801
Email: ron_sederoff@ncsu.edu, jerri johnson@ncsu.edu
Email: ron_sederoff@ncsu.edu, jerri johnson@ncsu.edu
Please see http://web.ahc.umn.edu/bIodata/nsfpine/ for further information.
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Contact: Sederoff, Ron
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                                                                                                                                                                                                                                                                                                                                                                                                                            Length 363;
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North Carolina State University
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Best Local Similarity
Matches 18; Conserv
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North Carolina State University
840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
NC 27695, USA
Tel: 919 515 7800
Email: ron sederoff@ncsu.edu, jerri_johnson@ncsu.edu
Seg primer: T3
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone lib="Nsf Xylem Normal wood Vertical"
/note="Vector: BlueScript SK; Site_1: Eco RI; The
sequences contain a 'cDNA adapter' between the EcoRI site
and the start of the EST. The adapter sequence is
'AATTCGGCACGAG'."
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840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh.
    Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 395)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: ron_sederoff@ncsu.edu, jerri_johnson@ncsu.edu
Please see_http://web.ahc.umn.edu/biodata/nsfpine/ for further
information.
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/clone lib="Nsf Xylem Normal wood Vertical"
/note="Vector: BlueScript SK; Site_1: Eco RI; The
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Contact: Sedence R. Ron
Forest Biotechnology
                                                  Sederoff,R. Mod Formation in the Pine Megagenome Molecular Basis of Wood Formation in the Pine Megagenome Unpublished (2000) Contact: Sederoff, Ron Forest Biotechnology
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90.0%; Pred. No. 9.5e+02;
iive 0; Mismatches 2;
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1. 395
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Tel: 919 515 7800
Fax: 919 515 7801
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CD028242/c
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AUTHORS
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was made from the roots of 6 weeks old seedlings grown in
hydroponic conditions. A three weeks drought stress
treatment was applied by lowering the osmotic potential of
the nutrient solution to -0.45 MPa using 170 g/l of
polypethylene glycol as an osmoticum. A mixture of
genotypes were used. Oligo-dT primed cDNA was
directionally cloned into the EcoRI-XhoI lambda-ZAP vector
arms and mass-excised to form a pBluescript phagemid"
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NXVV004A09F Nsf Xylem Normal wood Vertical Pinus taeda cDNA clone
NXVV004A09 5', mRNA sequence.
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BX678528
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Frigerio, J. and Plomion, C.
Friderio, J. and Plomion, C.
Identification of water-deficit responsive genes in Maritime pine (Pinus pinaster Ait.) using an EST approach
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           84.0%; Score 16.8; DB 5; Length 381; 90.0%; Pred. No. 9.5e+02; ive 0; Mismatches 2; Indels C
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/mol_type="mRNA"
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/clone="RS10E12"
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Email: Frigerio@pierroton.inra.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Frigerio JM
Genetique et Amelioration 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: T3.
Location/Qualifiers
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KEYWORDS
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Gaps

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Length 395; Indela EST 07-MAY-2003

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/call_type="Root (primary)"
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/dav_stage="Transitional"
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/clone_lib="NxRV (Mof Xylem Root wood Vertical)"
/clone_lib="NxRV (Mof Xylem Root wood Vertical)"
/clone lib="NxRV (Mof Xylem Root wood
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NXSI 130 G03 F NXSI (NBf Xylem Side wood Inclined) Pinus taeda cDNA clone NXSI 130 G03 S' similar to Arabidopsis thaliana sequence At2911660 unknown protein see http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence.
                                                                                                                                                                                                                                           Molecular Basis of Wood Formation in the Pine Megagenome Unpublished (2000)
Contact: Sederoff. Ron
Forest Biotechnology
North Carolina State University
840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh, NC 27655, USA
Tel: 919 515 7800
Fax: 919 515 7801
Email: ron sederoff@ncsu.edu, jerri johnson@ncsu.edu
Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sederoff.R.
Molecular Basis of Wood Formation in the Pine Megagenome
Molecular Basis of Wood Formation in the Pine Megagenome
Molecular Basis of Wood
Contact: Sederoff, Ron
Forest Biotechnology
North Carolina State University
North Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .477
/organism="Pinus taeda"
/mol_type="mRNA"
/strain="Coastal_plain loblolly pine from North Carolina"
                                                           Pinus taeda (loblolly pine)
Pinus taeda
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
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Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 491)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:3352"
/clone="NXRV099_H04"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pinus taeda (loblolly pine)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               311 GGGGTCAACGAGCAGGGGG 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGGTCAACGTTCAGGGGG 20
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      GI:21788156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 90.0
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: T3
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                                                                                                                                                                                                                              Sederoff, R.
      BQ655830.1
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BQ702629/c
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AUTHORS
TITLE
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NXRV099 H04 F NXRV (Nsf Xylem Root wood Vertical) Pinus taeda cDNA clone NXRV099 H04 S' similar to Arabidopsis thaliana sequence At235370 putative harpin-induced protein see

BQ655830

H055830
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840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
C27659, USA
Tel: 919 515 7800
Pax: 919 515 7801
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/db xref="texon:3152"
/db xref="texon:3152"
/clone="NXNV 181_G12"
/clone lib="N8f Xylem Normal wood Vertical"
/note="Vector: BlueScript SK; Site 1: Eco RI; The
gequences contain a 'CDNA adapter' between the EcoRI site
and the start of the EST. The adapter sequence is
sequences contain a 'CDNA adapter' between the EcoRI site and the start of the EST. The adapter sequence is 'AATICGGCACGAG'."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 451)
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NXNV 181 G12 F NSF Xylem Normal wood Vertical Pinus taeda cDNA clone NXNV 181 G12 F 's similar to Arabidopsis thaliana sequence At3911660 unknown protein see http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence.
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Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
                                                                                                                                                                                                                                 Gaps
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Contact: Sederoff, Ron
Forest Biotechnology
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84.0%; Score 16.8; DB 2; Length 451;
Best Local Similarity 90.0%; Pred. No. 9.7e+02;
Matches 18; Conservative 0; Mismatches 2; Indels
                                                                                                                                                                      Length 395;
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                                                                                                                                                                  Query Match

84.0%; Score 16.8; DB 6;
Best Local Similarity 90.0%; Pred. No. 9.5e+02;
Matches 18; Conservative 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Pinus taeda"
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Location/Qualifiers
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                                                                                                                                                                                                                                                                                                 1 GGGTCAACGTTCAGGGGGG 20
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BQ655830/c
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BE431401/c
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/cell type="Root (primary)"
/dev stage="Transitional"
/lab_nost="XL1-Blue"
/lab_nost="XL1-Blue"
/clone lib="NxRV (Nsf Xylem Root wood Vertical)"
/note="Vector: pBlueScript SK-; Site_1: Eco RI; Site_2:
/notes of a twelve year old tree in the transitional phase from juvenile wood to mature wood production. NOTE: The agequences contain a 'cDNA adapter' between the EcoRI site and the start of the EST. The adaptersequence is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mmpratt@uga.edu

RNA prepared and library constructed by W. Walter Lorenz, School of
Forestry, University of Georgia; plant material prepared at the
University of Florida; sequencing done in the Laboratory for
Genomics and Bioinformatics, University of Georgia. Sequence ends
have been trimmed to exclude vector and regions below Phred quality
16. Three-prime sequences are presented as their reverse complement
and have been trimmed to exclude polyA.
Seq primer: Mi3-21 (TGTAAAACGACGCCAGT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RIDR3_8 B06.bl A022 Loblolly pine roots recovering from drought DR3 Pinus taeda cDNA clone RIDR3_8 B06_A022 3', mRNA sequence. CF392169
                                             /strain="Coastal plain loblolly pine from North Carolina"

db_xref="taxon:3352"

/clone="NXRV108_E05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus. I tbases 1 to 495.
Pratt, L., Cordonnier-Pratt, M.-M., Lorenz, W.W., Dean, J., Gebremedhin, M., Dervinis, C., Martin, T., White, T., Davis, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An EST database from loblolly pine (Pinus taeda) roots recovering
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The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
TTE1: 706 542 1860
Fax: 706 583 0210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 16.8; DB 5;
Pred. No. 9.8e+02;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Pinus taeda"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from drought stress
Unpublished (2003)
Other ESTS: RTDR3 8 B06.91 A022
Contact: Cordonnier-Fratt WM
                                                                                                                                                                    /tissue_type="Xylem"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
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Pinus taeda
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/strain="CCLONES"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              316 GGGTCAACGAGCAGGGGG 297
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90.0%;
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Best Local Similarity 90.0°
Matches 18; Conservative
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AUTHORS
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CF392169
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                                                                                                                                                                                                                                                                                                                                                                                         / Branta = Togotal plain iobiolly pine from North Carolina (Jone="NXSI_130 G03" / Clone="NXSI_130 G03" / Clone="NXSI_130 G03" / Clone io the first of the first o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MZRV108 E05 F NXRV (Nsf Xylem Root wood Vertical) Pinus taeda cDNA clone NXRV108 E05 F similar to Arabidopsis thaliana sequence Arighted unknown protein see http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence.
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Contact: Sederoff, Ron
Forest Biotechnology
North Carolina State University
840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh, NC 27695, US 515 7800
Fax: 919 515 7801
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                                                                                                                                                                                                                                                                                                                                            /mol_type="mRNA"
/strain="Coastal plain loblolly pine from North Carolina"
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Pinus; Pinus.
                                                                                              Email: ron_sederoff@ncsu.edu, jerri_johnson@ncsu.edu
Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
information.
Seg primer: T3.
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Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
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Spermatophyta, Coniferopsida, Coniferales, Pinaceae;
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Pred. No. 9.8e+02;
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84.0%; Score 16.8; Di
Best Local Similarity 90.0%; Pred. No. 9.8e
Matches 18; Conservative 0; Mismatches
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NC 27695, USA
Tel: 919 515 7800
Fax: 919 515 7801
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NXNV_130_G08_F Nsf Xylem Normal wood Vertical Pinus taeda cDNA
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/mol type="manual caccad"
/tissue type="differentiating xylem"
/clone lib="pine Lambda Zap Xylem library"
/note="vector: Lambda Zap; Site_1: EcoRI; Site_2: XhoI;
/note="vector: Lambda Zap; Site_1: EcoRI; Site_2: XhoI;
Differentiating xylem was collected from the main stem of a 35-year old loblolly pine tree harvested during the growing season: RNA isolation and library preparation followed the methods of Allona et al., PNAS 95:9693-8,
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23H4 Pine Lambda Zap Xylem library Pinus taeda cDNA, mRNA sequence.
AI813183
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incre"vector: pSL1180; Site 1: EcoRI; Site 2: XhoI; The library was prepared from poIyA+ RNA from loblolly pine library was prepared from poIyA+ RNA from drought. Water was withheld from ramer clones until predawn needle water potential reached -1.75 MPa. Plants were well watered on day 7 and allowed to recover for 2 days, at which time roots were harvested for RNA isolation. Double-stranded cDNA was cloned unidirectionally into pSL1180. Inserts excised with EcoRI (5' end) and XhoI (3' end)."
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Forest Biotechnology Group
North Carolina State University
North Carolina State University
Raleigh, NC, 2785-8008
Tel: 919-515-7800
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                                                                                                                                                                                                                Score 16.8; DB 7; Length 495; Pred. No. 9.8e+02;
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BFS17774 S12 bp mENA linear EST 07-MAY-2003 NXSI 031 A10 F NXSI (Naf Xylem Side wood Inclined) Pinus taeda CDNA clone NXSI 031-A10 5' similar to Arabidopsis thaliana sequence At3911660 unknown protein see http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence. BFS17774
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Molecular Basis of Wood Formation in the Pine Megagenome
Unpublished (2000)
Contact: Sederoff, Ron
Forest Biotechnology
North Carolina State University
North Carolina State University
Money Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             840 Main Campus Drive, Centennial Campus, Campus Box 7247, Raleigh, NC 27695, USA
Tel: 919 515 7800
Fax: 919 515 7801
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/clone lib="Naf Xylem Normal wood Vertical"
/note="Vector: BlueScript SK; Site 1: Eco RI; The
gequences contain a 'cDNA adapter' between the EcoRI site
and the start of the EST. The adapter sequence is
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Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.

    (bages 1 to 512)

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Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 505)
clone NXNV_130_G08 5' similar to Arabidopsis thaliana sequence At3g11660 unknown protein see http://mlps.gsf.de/proj/thal/db/index.html, mRNA sequence.
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please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
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Tel: 919 515 7800
Fax: 919 515 7801
Email: ron_sederoff@ncsu.edu, jerri_johnson@ncsu.edu
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Pred. No. 9.9e+02;
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/organism="Pinus taeda"
/mol_type="mRNA"
/db_xref="taxon:3352"
                                                                                                                                                                                                                                                                                                                                     Section of Wood Formatic Unpublished (2000)
Contact: Sederoff, Ron Forest Blotechnology
North Carolina State University
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BG275515
NXSI 139 F12 F NXSI (Nsf Xylem Side wood Inclined) Pinus taeda cDNA clone NXSI 139 F12 5' similar to Arabidopsis thallana sequence At3g11660 unknown protein see
http://mips.gsf.de/proj/thal/db/index.html, mRNA sequence.
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Contact: Sederoff, Ron
Forest Biotechnology
North Carolina State University
North Carolina State University
NOT 07695, USA
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/db.ref="taxon:3352"
/clone="NXSI_339 F12"
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/note="Vector: pCMV SPORT6; Site_1: NotI; Site_2: SalI;
Library made from pooled tissue from brain, gill, liver,
spleen, muscle, and kidney."
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Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
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Pred. No. 9.9e+02;
0; Mismatches 2;
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                                                                                                                                                                                                  84.0%;
90.0%;
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Best Local Similarity 90.03
Matches 18; Conservative
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Tel: 919 515 7800
Fax: 919 515 7801
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Seq primer: T3.
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                                                                                                                                                                 / MOLEYPE="MENA"
/ MOLEYPE="MENA"
/ MOLEYPE="MENA"
/ Lone="MENED 13152"
/ Clone="MENED 13152"
/ Clone="MENED 13152"
/ Clone="MENED 1316"
/ Lissue_Type="XyJem"
/ Cell_type="XyJem"
/ Cell_type="XyJem"
/ Cell_type="Side"
/ Gev_Stage="Juvenile"
/ Gev_Stage="Juvenile"
/ Lone lib="MENED 1816"
/ Lone lib="MENED 1816"
/ Clone lib="MENED 1816"
/ Lone library is from early (spring) wood, taken from three six-year old tress (three different genotypes), in the juvenile phase. These trees were induced to form side wood by bending to a 45 degree angle and tying them to the ground Differentiating xylem was warvested from the sides of the inclined stems, and a mixture of all three genotypes was used for the library. Oligo-dT primed cDNA was directionally cloned into the EcoRI-Xinol BlueScript SK vector arms. NOTE: The sequences contain a 'CDNA dapter' between the EcoRI site and the start of the EST. The adapter sequence is 'AATTCGGCACGAG'."
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Oncorhynchus mykiss
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Bukaryota; Meoprerygii; Teleostei; Buteleostei;
Protacanthopterygii; Nalmoniformes; Salmonidae; Oncorhynchus.
1 (bases 1 to 530)
Rexroad,C.E. 3rd, Lee,Y., Keele,J.W., Karamycheva,S., Brown,G.,
Koop,B., Gahr,S.A., Palti,Y. and Quackenbush,J.
Sequence analysis of a rainbow trout cDNA library and creation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Rexroad CE
USDA, ARS, National Center for Cool and Cold Water Aquaculture
USDA, ARS, National Center for Cool and Cold Water Aquaculture
11876 Leetown Road, Kearneysville, WV 25430, USA
Tel: 304 724 8340 x2129
Fax: 304 725 0351
Email: crexroad@ncccwa.ars.usda.gov
Email: crexroad@ncccwa.ars.usda.gov
Eximge pass sequencing. Bases called with phred v0.020425.c and
trimmed with the aid of the trim_alt option. Vector identified by
cross match v0.990329.
Seq primer: AGCGGATAACAATTCACACAGGA.
     Please see http://web.ahc.umn.edu/biodata/nsfpine/ for further
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Cytogenet. Genome Res. 102 (1-4), 347-354 (2003)
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                                                                                                                        /organism="Pinus taeda"
/mol_type="mRNA"
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/db_xref="taxon:8022"
/clone="1RT77A23_A_A12"
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Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus.
1 (bases 1 to 561)
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                                                                                                                                                  AASS6997 546 bp mRNA linear EST 28-AUG-1998
819 Loblolly pine N Pinus taeda CDNA clone SN3E, mRNA sequence.
AASS6997
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Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
                                                                                                                                                                                                                                                  Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Coniferopsida, Coniferales, Pinaceae, Pinus, Pinus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plain loblolly pine from North Carolina"
                                                                                                                                                                                                                                                                                                             Alloma, I., Quinn, M., Shoop, E., Swope, K., St.Cyr, S., Carlis, J., Riedl, J., Retzel, E. Campbell, M.M., Sederoff, R. and Whetten, R.W. Analysis of xylem formation in pine by cDNA sequencing Proc. Natl. Acad. Sci. U.S.A. 95 (16), 9693-9698 (1998) 98356220
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                            Gaps
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North Carolina State University
Dept. of Forestry, NC State University, 6113 Jordan Hall,
Raleigh,NC, 27695-8008
Tel: 919-515-7800
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            9.9e+02;
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            90.0%; Pred. No. 9.9e
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/mol_type="mRNA"
/strain="Coastal plain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fax: 919-515-7801
Email: rosswhet@unity.ncsu.edu
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                                                         1 GGGTCAACGTTCAGGGGG 20
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                                                                                                                                                                                                          AA556997.1 GI:3366011
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              . Similarity 90.0%
18; Conservative
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les 18; Conserv
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CF673102/c
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Email: mmpratt@dga.edu
RNA prepared and library constructed by W. Walter Lorenz (School of RNA prepared and library constructed by W. Walter Lorenz (School of Forest Resources, University of Georgia); plant material prepared by Craig Zimmermann (School of Forest Resources, University of Georgia) using rooted cuttings provided by the Forest Biology Research Cooperative (FBRC) and the CLONES project a the University of Florida; sequencing done in the Laboratory for Genomics and Bioinformatics, University of Georgia. Sequence ends have been trimmed to exclude vector and regions below Phred quality and have been trimmed to exclude polyA.

Seq primer: M13-21 (TGTAAAACGACGGCCAGT)
POLYA=Yes.
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/db xrafe="taxon:3352"
/dlone="RTCNT1 76 D05 A029"
/dlone | Note="might | Dos A029"
/dlone | Dos A029" | Dos A029" |
/dlone | Dos A020 | Dos A020" |
/dlone | Dos A020 | Dos A020 | Dos A020 |
/dlone | Dos A020 | Dos A020 | Dos A020 |
/dlone | Dos A020 | Dos A020 | Dos A020 |
/dlone | Dos A020 | Dos A020 | Dos A020 |
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(bases 1 to 561)
tt,L., Cordonnier-Pratt,M.-M., Lorenz,W.W., Zimmermann,C. and
                                                                                                                                        An EST database from untreated loblolly pine (Pinus taeda) roots
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                                                                                                                                                                                                             Unpublished (2003)
Other ESTS: RTCNT1 76 D05.g1 A029
Contact: Cordonier-Pratt MM
Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
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/organism="Pinus taeda"
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/strain="3 CCLONES"
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Db 255 GGGGTCAACGAGGGGGG 236 Search completed: September 3, 2005, 09:48:26 Job time: 2982.57 secs

1 GGGGTCAACGTTCAGGGGGG 20

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0; Gaps

Query Match

84.0%; Score 16.8; DB 7; Length 566;
Best Local Similarity 90.0%; Pred. No. 1e+03;
Matches 18; Conservative 0; Mismatches 2; Indels

BW347242 AV99631 BW25631 BW26632 AV672198 BW244852 AV672377 BW254636 AV990599 BW434636 AV990599 BW113437 BW210554 BW210554 BW210554

BW431183 BW124438 BW441015 BW429893 BW430120 BW435693 BW116702

BW434148 BW498282 BW398282 BW397282 BW367292 BW256231 BW256231 BW256231 BW433399 BW433399 BW433399 BW431183 BW429633 BW429633 BW429633 BW429633 BW429633 BW429633 BW42963 BW431183 BW429633 BW42963 BW429633 BW42963 BW431183 BW429633 BW429633 BW42963 BW431183 BW42963 BW4296 BW42

| GenCo Copyright (c) 19 cleic search, using September 3, 2005 1 9 2 2005 1 9 2 2005 1 9 2 2 2005 1 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  | GenCore version  Copyright (c) 1993 - 2005  cleic search, using sw model  September 3, 2005, 07:03:00  19 Catgacgttgagct 15  19 Catgacgttgagct 15  19 Catgacgttgagct 15  19 Catgacgttgagct 15  10 Gapop 10.0, Gapext 1.0  34239544 seqs, 19032134700  hits satisfying chosen paramaximum Match 0%  Listing first 90 summaries  EST:*  1  | GenCore version 5.1.6  Cleic search, using sw model  September 3, 2005, 07:03:09; Search time 22  US-10-789-536-6  1 gcatgacgttgagct 15  1 Deatgacgttgagct 16  1 Deatgacgtgagct 16  1 Deatgacgtgagctga | GenCore version 5.1.6  cleic search, using sw model  September 3, 2005, 07:03:09; Search time 2229.43 [Without alignments]  15   | Cepyright (c) 1993 - 2005 Compugen Ltd.  cleic search, using sw model  September 3, 2005, 07:03:09; Search time 2229, 15-103 Million cell  US-10-789-536-6  1 gcatgacgttgagct 15  1 DENTITY NUC  Cappp 10-0, Capext 1.0  34239544 seqs, 19032134700 residues  hits satisfying chosen parameters: 68479086  Liength: 0 Commaries  EST:*  1 99-est1:* 2 99-est2:* 3 99-est2:* 4 99-est2:* 5 99-est4:* 6 99-est4:* 6 99-est4:* 6 99-est4:* 6 99-est4:* 6 99-est4:* 7 99-est4:* 7 99-est4:* 8 99-ges2:* 100:0 358 11.449429  100:0 358 1 AJ494285  100:0 368 1 AJ494285  100:0 534 2 AV988927  100:0 534 2 AV988927  100:0 534 2 AV988937  100:0 534 2 AV988936  100:0 534 2 AV988495  100:0 601 5 BW34456  100:0 601 5 BW34469  100:0 602 5 BW344399  100:0 603 5 BW344399  100 |  | OM nucleic - 1<br>Run on:            | Title: Perfect score Sequence: Scoring table                                    | Total number of<br>Minimum DB seq<br>Maximum DB seq<br>Post-processing | Database :   | Pred. No<br>score grand is dand i | 2 4 4 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9   | .00.00   |
|--|--|--|--|--|--|--------------------------------------|---|--|--|---|---|----------|
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|  | nmaries mmaries pr. 17:03:00 1 | version 5.1.6  - 2005 Compugen Ltd.  / model  77:03:09; Search time 22  (without alignment 256.103 Million ce the cotal score of the result the score of the result score of the result score of the search time 134700 residues  amaries  maries  MA4292  AA4293  AA4283  AA4283  AA4283  AA4482  AA48283  AA4482  AA48283  AA4482  AA48283  AA4482  AA482  AA483  AA4 | version 5.1.6  - 2005 Compugen Ltd.  / model  //:03:09   | version 5.1.6  - 2005 Compugen Ltd 2007 Search time 2229.43 & Gently Ltd 256.103 Million cell upd 256.103 Millio  | enCol  | 18ing<br>2005,                       | 9 D B   | 9 Ch   |  | of raise of sist of si    | i   |          |
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| ## Ltd.  ### 1229-43 Seconds  #### 1220-43 Seconds  ##### 1220-43 Seconds  ##### 1220-43 Seconds  ##### 1220-43 Seconds  ###################################   | have a ing printed, n.  ription  ription  ription  ription  7702 v932012.r 4293 AJ494292 7702 v932012.r 4293 AJ494293 77494292 7704 v932012.r 7459 BW247469 7707 v932012.r 7459 BW24718.9 7707 v932012.r 7459 BW245018 7708 v932012.r 7459 BW245018 7708 v932012.r 7459 BW245018 7708 AV98018  | 0.00   |  | RESERVE WEER BREEF FOR STANDARD STANDAR | 15<br>15<br>15<br>15   | 15<br>15<br>15<br>15<br>15<br>15     | 15<br>15<br>15<br>15<br>15<br>15  | 12 22 22 23 23 23 23 23 23 23 23 23 23 23                              | 24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                       | 15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>1   | 155 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |          |
| ## Property   Property | updates/sec a 25   | 2.5  | 00000000 0000 0000 0000 0000 0000 0000 0000  | 444444444444444444444444444444444444444  | 0.000.000.000.000.000.000.000.000.000.000.000.000.000.000.000.0000 | 0.0001                               | 0.0000000000000000000000000000000000000   |  | 100000000000000000000000000000000000000                      | 1000.000.0000.0000.0000.0000.0000.0000.0000   |   |          |
| ## 16.4.  ## 16.4.  ## 16.4.  ## 16.4.  ## 16.4.  ## 16.5.  ## 16.  ## 16.5. | ## Seconds   C   25   15   100   | C C C C C C C C C C C C C C C C C C C  | 2.6 2.7 2.8 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9  | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  |  |                                      |   |  |  |   |   |          |
| ## 12.25  ## 12. | updates/sec  updat | C 25 15 100.0  C 27 15 100.0  C 28 115 100.0  C 31 1 15 100.0  C 32 1 15 100.0  C 34 1 15 100.0  C 4 2 1 15 100.0  C 5 2 1 15 100.0  C 6 2 1 15 100.0  C 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | C 28 28 15 100.0 C 29 31 15 100.0 C 31 2 15 100.0 C 31 3 15 100.0 C 4 4 4 4 15 100.0 C 5 5 1 15 100.0 C 6 5 1 15 100.0 C 7 4 7 15 100.0 C 7 8 8 15 100.0 C 8 8 8 1 15 100.0 C 8 8 8 1 15 100.0 C 8 8 8 1 15 100.0 C 8 8 8 8 1 15 100.0 C 8 8 8 8 8 1 15 100.0 C 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8  | 11.55  |  |                                      |   |  | •  |   |   |          |
| ## 124.  ## 125.  ## 126.  ## 125.  ##  | 1.3 Seconds  1.43 Seconds  1.40 Seconds  1.40 Seconds  1.41 Seconds  1.42 Seconds  1.42 Seconds  1.43 Seconds  1.44 Seconds  1.45 Seconds  1.45 Seconds  1.46 Seconds  1.47 Seconds  1.48 Seconds  1.49 Printed,  1.40 P | C 25   | C 25   | 25 15 100.0 645 28 28 15 100.0 645 28 28 15 100.0 645 31 31 15 100.0 645 31 31 15 100.0 645 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 654 31 31 15 100.0 655 31 31 15 100.0 655 31 31 15 100.0 655 31 31 15 100.0 657 31 31 15 100.0 657 31 31 15 100.0 657 31 31 15 100.0 657 31 31 15 100.0 657 31 31 31 31 31 31 31 31 31 31 31 31 31  | BW43<br>BW34<br>BW34<br>BW25                                       | AV67<br>BW24<br>AV67<br>BW25<br>BU65 | BW43<br>AV99<br>CA35<br>BW11<br>BW23<br>AV97<br>BW24<br>BW24                    | BW12<br>BW12<br>BW43<br>BW43<br>BW43<br>BW11<br>BW11<br>BW11           | AL66<br>AL66<br>CA27<br>CR67<br>CR67<br>CR67<br>CR69<br>CR69 | CR69<br>CR71<br>CR71<br>CR69<br>CR69<br>CR69  | CR685993<br>CR685993<br>CR6682684<br>CR6682309<br>CR663309<br>CR698356<br>CR698356<br>CR698356<br>CR698356<br>CR698356<br>CR698356<br>CR698356<br>CR698335<br>CR698335<br>CR698335<br>CR7004083 | ALIGNME  |

Mus muscu EST66226 AL667096 AL667096 AL66670707 Tetraodon Tetraodon

ALIGNMENTS

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368 bp mRNA linear EST 17-JUL-2002 AJ494292 Stratagene UniZAP whole-larva library Ciona intestinalis AJ494292
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
1 (bases 1 to 368)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev stage="larval"
/clone lib="Stratagene UniZAP whole-larva library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 15; DB 1; Length 355; 100.0%; Pred. No. 1e+03; ive 0; Mismatches 0; Indel8
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/organism="Ciona intestinalis"
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  Trace considered overall poor quality
High quality sequence stop: 1.
Location/Qualifiers
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                                                                                                                                                             /clone="IMAGE:819910"
                                                                                                                                                                                                       tissue_type="embryo"
                                                                                                                                                                                                                     /dev_stage="11.5dpc"
/lab_host="DH10B"
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Universita' di Padova
via G.Colombo, 35121, Italy.
Location/Qualifiers
                                                                                                   /mol_type="mRNA"
/strain="C57BL/6J"
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Unpublished (2000)
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Marram, Hillier, Allen, M., Bowles, M., Dietrich, N., Dubuque, T., Geisel, S., Kucaba, T., Le, M., Martin, J., Morris, M., Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B., Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and
BW247469 Nori Satoh unpublished cDNA linear EST 09-NOV-2002 BW247469 Nori Satoh unpublished cDNA library, tailbud embryo Ciona integrinalis cDNA clone citb074008 5', mRNA sequence.
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                                                                                                                                        Ciona intestinalis
Bukaryotas, Metazota; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
1 (bases 1 to 153)
Satou,Y., Shin-i,T., Kohara,Y. and Satoh,N.
Expressed genes in Ciona intestinalis (2002c)
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_rype="mRNA"
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/db xrefe="axxon.7719"
/clone="citb074008"
/tissue_type="whole animal"
/dev_stage="tailbud embryo"
/clone_lib="Nori Satch unpublished cDNA library, tailbud embryo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                355 bp mRNA linear EST 30-MAY-ve32g12.r1 Ko mouse embryo 11 5dpc Mus musculus cDNA clone IMAGE:819910 5' similar to gb:M64641 Mouse Mov-34 protein mRNA, complete cds (MOUSE);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL , contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
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Unpublished (1996)
Contact: Marra M/Mouse EST Project
WashU-HHMI Mouse EST Project
WashIngton University School of MedicineP
WashIngton Oniversity School of MedicineP
WashIngton Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Email: mouseest@watson.wustl.edu
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Pred. No. 9.4e+02;
                                                                                                                                                                                                                                                                                                                       Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Fel. 81-75-75-753-4081
Fax: 81-75-705-1113
Email: satoh@ascidian.zool.kyoto-u.ac.jp.
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                                                                                                                                                                                                                                                                                    Contact: Nori Satoh
Department of Zoology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GCATGACGTTGAGCT 15
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                                                                                                                        Ciona intestinalis
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Best Local Similarity luv.
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AJ494293.1 GI:21897703
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Phlebobranchia; Cionidae; Ciona.
1 (bases 1 to 376)
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Identificazione e descrizione preliminare di nuovi geni e proteine
d'interesse filogenetico, nel tunicato Ciona intestinalis Thesis
(2000) Department of Biological Sciences, Universita di Padova,
                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona
1 (bases 1 to 368)
Ievolella,C.
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AJ494285
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/dev_stage="larval"
/clone_lib="Stratagene UniZAP whole-larva library"
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Score 15; DB 1; Length 368;
Pred. No. 1e+03;
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                                Mismatches
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/db_xref="taxon:7719"
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Location/Qualifiers
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CRIBI Biotechnology Centre
Universita' di Padova
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Best Local Similarity 100.
Matches 15; Conservative
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Best Local Similarity 100.
Matches 15; Conservative
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Email: est@watson.wustl.edu
Libraries were constructed by Dr. Stavros Bashiardes as part of the
Physcomitrella EST program (PEP) at the Univ. of Leeds (UK) and
Washington Univ. in St. Louis (USA) DNA sequencing by: Washington
University Genome Sequencing Center For information on obtaining a
clone please context: Celia Knight (c.d.knight@leeds.ac.uk)
Seg primer: -40RP from Gibco
High quality sequence stop: 423.
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E ukaryota; Viridiplantae; Streptophyta; Embryophyta; Bryophyta;
Bryopsida; Punaridae; Funariales; Funariaceae; Physicomitrella.
Bryopsida; Funaridae; Funariales; Funariaceae; Physicomitrella.
I (bases 1 to 4214)
S Quatrano, R., Bashiardes, S., Cove, D., Cuming, A., Knight, C.,
Clifton, S., Marra, M., Hillier, L., Pape, D., Martin, J., Wylle, T.,
Underwood, K., Theising, B., Allen, M., Bowers, Y., Person, B.,
Swaller, T., Steptoe, M., Gibbons, M., Harvey, N., Ritter, E.,
Leeds/Wash U Moss BST Project
Unpublished (1999)
Condact: Ralph Quatrano
Condact
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ga25h12.yl Moss EST library PPN Physcomitrella patens cDNA clone
PPE_SOURCE_ID:PPN010424 5', mRNA sequence.
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Best Local Similarity 100.0
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100.0%;
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            pallescript sequence. The vector was then packaged using pallescript sequence. The vector was then packaged using Gold gigapackaging extracts. Library was grown in XIIBlue MRF' cells and amplified. The library was grown in XIIBlue MRF' cells and splitting. The library was grown in XIIBlue exision using Stratagens 'Mass excision kit' that uses exassist as a helper phage that releases the pBluescript sequence and circularises it as single stranded plasmids that are then packaged (by helper phage) and secreted out of the host cell as phagemids. Solk cells were transformed with phagemids and the library was plated out on LB-amp plates to select for transformants. Approximately 1,000,000 colonies were grown and recovered. The double stranded plasmid library was recovered by using Quiagen Midi prep kit. 2 micro grams of each library were used to transform DH10B cells by electroporation."
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Phlebobranchia; Cionidae; Ciona.

Phlebobranchia; Cionidae; Ciona.

I (Dases I to 428)

Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.

Expressed genes in Ciona intestinalis (2002c)

Unpublished (2002)
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/dev stage="tailbud embryo"
/clone_lib="Nori Satoh unpublished cDNA library, tailbud
embryo"
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Pred. No. 1e+03;
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Department of Zoology
Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4081
Fax: 81-75-705-1113
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/db_xref="taxon:7719"
/clone="citb101a21"
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Gene Function Analysis
Phycologia (2004) In press
Contact: Erika Asamizu
The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
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BP094747 Chlamydomonas reinhardtii C9 various conditions Chlamydomonas reinhardtii cDNA clone MXL028f09_{
m L}r 5', mRNA sequence.
                                                                                                                                                                                                                                                                                          1 (bases 1 to 486)
Asamizu,E., Nakamura,Y., Miura,K., Fukuzawa,H., Fujiwara,S.,
Hirono,M., Iwamoto,K., Matsuda,Y., Minagawa,J., Shimogawara,K.,
Takahashi,Y. and Tabiata,S.
Establishment of Publicly Available cDNA Material and Information
Resource of Chlamydomonas reinhardtii (Chlorophyta), to Facilitate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
1 (bases 1 to 491)
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                                                                                                                                                            Chlamydomonas reinhardtii
Chlamydomonas reinhardtii
Eukaryota, Viridiplantea; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pBluescriptII SK-; Site_1: EcoR1; Site_2:
XhoI; The cDNA library was made from a mixture of celIs
grown under various conditions"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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/clone lib="Chlamydomonas reinhardtii C9 various
conditions"
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Pred. No. 1e+03;
; Mismatches 0; Indels
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Location/Qualifiers
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Contact: Ievolella C
CRIBI Biotechnology Centre
Universita' di Padova
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/strain="C9"
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Expressed genes in Ciona intestinalis
Unpublished (2000)
Contact: Nori Satch
Department of Zoology
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Ciona intestinalis
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AV984785/c
LOCUS
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KEYWORDS
SOURCE
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TITLE
JOURNAL
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     TITLE
JOURNAL
COMMENT
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Ciona intestinalis
Ciona intestinalis
Ciona intestinalis
Eukaryota; Maraya Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
Eukaryota; Maraya, Chordata; Ciona.
I (bases 1 to 502)
S Satoh, N., Satouya, Y., Kohara, Y. and Shin-i, T.
Expressed genes in Ciona intestinalis
Unpublished (2000)
Conteat: Nori Satoh
Department of Zoology
Kyoto University
Sakyo-to, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-75-4081
Fax: 81-75-75-1113
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Bukaryota, Metazoa, Chordata, Urochordata, Ascidiacea, Enterogona,
Bulebobranchia, Cionidae, Ciona.
1 (Dases 1 to 534)
Satoh, N., Satou, Y., Kohara, Y. and Shin-i, T.
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/clone="citb33m18"
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/clone lib="Nori Satch unpublished cDNA library, tailbud embryo"
                                                                                                                                      Gaps
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                                                                                                                                    0; Indels
                     /dev stage="larva"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: satch@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
1. .502
                                                                                                                                    0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV948910.
AV948910.1 GI:19426669
EST.
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AV988927.1 GI:19477698
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Best Local Similarity 100.0
Matches 15; Conservative
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Best Local Similarity 100.
Matches 15; Conservative
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VERSION
KEYWORDS
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AV948910/c
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DEFINITION
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VERSION
KEYWORDS
SOURCE
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AV988927/c
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AUTHORS
TITLE
JOURNAL
COMMENT
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AUTHORS
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AV984785 Sofe bp mRNA linear EST 14-MAR-2002 AV984785 Nori Satch unpublished cDNA library, larva Ciona intestinalis cDNA clone cilv38j22 5', mRNA sequence. AV984785 GI:19473653 EST.
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1 (bases 1 to 566)
Satoh, N., Satou, Y., Kohara, Y. and Shin-i, T.
Expressed genes in Ciona intestinalis
Contact: Nori Satoh
Department of Zoology
                                                                                                                                                                                                                                              /clone="cilv01f01"
/tissue_type="whole animal"
/dev_stage="larva"
/clone_lib="Nori Satoh unpublished cDNA library, larva"
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/dev stage="larva"
/clone lib="Nori Satoh unpublished cDNA library, larva"
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Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4081
Fax: 81-75-705-1113
Email: satch@ascidian.zool.kyoto-u.ac.jp.
Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4081
Fax: 81-75-705-1113
Email: satch@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Ciona intestinalis"
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/db_xref="taxon:719"
/clone="cilv38j22"
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/organiam="Ciona intestinalis"
/mol_type="mRNA"
/db_xref="taxon:7719"
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602 bp mRNA linear EST 27-MAY-2004 BW345567 Yutaka Satou unpublished cDNA library, embryo whole animal Ciona intestinalis cDNA clone ciem830p09 5', mRNA sequence.
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Ciona intestinalis
Ciona intestinalis
Bukaryota, Metazoa, Chordata, Urochordata, Ascidiacea, Enterogona,
Phlebobranchia, Cionidae, Ciona.
1 (bases 1 to 602)
Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.
Expressed genes in Ciona intestinalis (2004)
Unpublished (2004)
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whole animal"
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1 (bases 1 to 601)
Satoh,N., Satou,Y., Kohara,Y. and Shin-i,T.
Expressed genes in Ciona intestinalis
Unpublished (2000)
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AV964482 Nori Satoh unpublished cDNA library, larva Ciona intestinalis cDNA clone cilv13g11 5', mRNA sequence.
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                                                                                                     Score 15; DB 5; Length 594;
Pred. No. 1.1e+03;
Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Nori Satch
Department of Zoology
Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-763-4081
Fax: 81-75-705-1113
Fmail: satch@ascidian.zool.kyoto-u.ac.jp.
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                                                                                  Query Match 100.0%; Sc
Best Local Similarity 100.0%; Pr
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Ciona intestinalis
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Best Local Similarity 100.
Matches 15; Conservative
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KEYWORDS
SOURCE
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LOCUS
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AV964482/c
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AUTHORS
TITLE
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AUTHORS
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JOURNAL
COMMENT
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Ciona intestinalis cDNA clone ciem854p09 5', mRNA sequence.
                          AV996055 AV01 Satch unpublished cDNA linear EST 15-MAR-2002 AV996055 Nori Satch unpublished cDNA library, tailbud embryo Ciona intestinalis cDNA clone citb43d07 5', mRNA sequence.
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1 (bases 1 to 594)

Satou,Y., Shin-i,T., Kohara,Y. and Satoh,N.

Expressed genes in Ciona intestinalis (2004)

Unpublished (2004)

Contact: Yutaka Satou
                                                                                                                                                             Ciona intestinalis

Bukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;

Bukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;

Chases I to 572;

Satoh,N., Satou,Y., Kohara,Y. and Shin-i,T.

Expressed genes in Ciona intestinalis

Contact: Nori Satoh

Department of Zoology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="citb43407"
/tissue_type="whole animal"
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Email: yutaakaascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                     Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
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Fax: 81-75-705-1113
Email: satoh@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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/tissue_type="whole animal"
                                                                                        AV996055
AV996055.1 GI:19487389
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BW353563/c
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621 bp mRNA linear EST 27-MAY-2004
BW339646 Yutaka Satou unpublished cDNA library, embryo whole animal
Ciona intestinalis cDNA clone ciem813a02 5', mRNA sequence.
            EST 09-NOV-2002
                                                                                                                                           Ciona intestinalis

Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;

Phlebobranchia; Cionidae; Ciona.

1 (bases 1 to Shin-i,T., Kohara,Y. and Satoh,N.

Expressed genes in Ciona intestinalis (2002c)

Unpublished (2002)

Contact: Nori Satoh

Department of Zoology
            609 bp mRNA linear EST 09-NOV-2002
BW247380 Nori Satoh unpublished cDNA library, tailbud embryo Ciona
intestinalis cDNA clone citb074j18 5', mRNA sequence.
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Ciona intestinalis
Ciona intestinalis
Eukaryota, Metazoa, Chordata, Urochordata, Ascidiacea, Enterogona,
Phlebobranchia, Clionidae, Ciona.
1 (bases 1 to 621)
Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.
Expressed genes in Ciona intestinalis (2004)
Unpublished (2004)
Contact: Yutaka Satou
Department of Zoology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="who!e animal"
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embryo"
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                          Email: satch@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
1. .609
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Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
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Fax: 81-75-705-1113
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Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4095
Fax: 81-75-705-1113
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BW339646.1 GI:47751447
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                                                                                                                                    Ciona intestinalis
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Best Local Similarity 100.
Matches 15; Conservative
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BW339646/c
BW247380/c
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Ciona intestinalis cDNA clone ciem852104 5', mkNA sequence.
Bw352814
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/tissue_type="whole animal"
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I (bases I to 60; Kohara,Y. and Satoh,N. Expressed genes in Ciona intestinalis (2004)
Contact: Yutaka Satou
Department of Zoology
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                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 15; DB 5; Length 602; 100.0%; Pred. No. 1.18+03; ive 0; Mismatches 0; Indels
                              Kyoto University
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Location/Qualifiers
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Tel: 81-75-753-4095
Fax: 81-75-705-1113
Email: yutaka@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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    Contact: Yutaka Satou
                        Department of Zoology
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Ciona intestinalis
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Best Local Similarity 100.
Matches 15; Conservative
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Best Local Similarity 100.
Matches 15; Conservative
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LOCUS

ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

REFERENCE AUTHORS TITLE JOURNAL COMMENT

FEATURES

ORIGIN

RESULT 18

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RESULT 17 BW352814/c

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AV985099 636 bp mRNA linear EST 14-MAR-2002 AV985099 Nori Satch unpublished cDNA library, larva Ciona intestinalis cDNA clone cilv40k09 5', mRNA sequence.
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Ciona intestinalis
Ciona intestinalis
Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Philebobranchia; Cionidae; Ciona.
1 (bases 1 to 636)
Satoh,N., Satou,Y., Kohara,Y. and Shin-i,T.
Expressed genes in Ciona intestinalis
Unpublished (2000)
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embryo"
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100.0%; Score 15; DB 5; I
Best Local Similarity 100.0%; Pred. No. 1.1e+03;
Matches 15; Conservative 0; Mismatches 0;
                                                     Kyoto University
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Fax: 81-75-705-1113
Email: satoh@ascidian.zool.kyoto-u.ac.jp.
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Location/Qualifiers
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| db xref="t-axon: 7719"
| clone="citb064h22"
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/organism="Ciona intestinalis"
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Sakyo-w, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4081
Fax: 81-75-705-1113
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/clone="cilv40k09"
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Department of Zoology
                  Contact: Nori Satoh
Department of Zoology
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  Unpublished (2002)
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Best Local Similarity 100.
Matches 15; Conservative
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AV985099/c
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                                                                                                                                                                                                                                                                               625 bp mRNA linear EST 09-NOV-2002 BW244959 Nori Satoh unpublished cDNA library, tailbud embryo Ciona intestinalis cDNA clone citb066d09 5', mRNA sequence. BW244959 BW244959.1 GI:24824877
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Phlebobranchia, Cionidae, Ciona.
I (basea I to 625)
Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.
Expressed genes in Ciona intestinalis (2002c)
Unpublished (2002)
Contact: Nori Satoh
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Kyoto University
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Fax: 81-75-705-1113
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Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
1 (bases 1 to 635)
Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.
Expressed genes in Ciona intestinalis (2002c)
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whole animal"
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/clome_lib="Nori Satoh unpublished cDNA library, tailbud
embryo"
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100.0%; Pred. No. 1.1e+03;
tive 0; Mismatches 0; Indels
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Pred. No. 1.1e+03;
; Mismatches 0;
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Location/Qualifiers
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                                                                                               Query Match
Best Local Similarity 100.0%;
Matches 15; Conservative 0;
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Best Local Similarity 100.
Matches 15; Conservative
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BW244959/c
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ACCESSION VERSION KEYWORDS SOURCE ORGANISM

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LOCUS DEFINITION

BU655032

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643 bp mRNA linear EST 03-JUN-2004 BW434148 Nori Satoh unpublished cDNA library, juvenile whole animal Ciona intestinalis cDNA clone cijv027p10 5', mRNA sequence. BW434148 BW434148 EST.
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/dev_stage="embryo"
/clone_lib="Yutaka Satou unpublished cDNA library, embryo
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Eukaryota, Metazoa, Chordata, Urochordata, Ascidiacea, Enterogona,

Phlebobranchia, Cionidae, Ciona.

1 (bases 1 to 643)

Satou, Y., Makayama, A., Shin-i, T., Kohara, Y. and Satoh, N.

Expressed genes in Ciona intestinalis (2004b)

Unpublished (2004)
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/clone lib="Nori Satch unpublished cDNA library, juvenile
whole animal"
Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona; Phlebobranchia; Cionidae; Ciona.

1. (bases 1 to 640)
Satou,Y., Shin-i,T., Kohara,Y. and Satoh,N..
Expressed genes in Ciona intestinalis (2004)
Unpublished (2004)
Department of Zoology
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hilarity 100.0%; Pred. No. 1.1e+03;
Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4095
Fax: 81-75-705-1113
Email: yutakadaacidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Ciona intestinalis"
/mol_type="mkNA"
/db_xref="taxon:719"
/clone="ciem816k14"
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/mol_type="mmnNa"
/mol_type="menny"
/clone="cijv027p10"
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Tel: 81-75-753-4081
Fax: 81-75-705-1113
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Department of Zoology
Kyoto University
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/ Organism "Chlamydomonas reinhardtii"
/ Mol_type="mRNA"
/ Mole="wercor: glauescript II SK-; Site_I: EcoRI; Site_2:
/ Mole="wercor: plauescript William J. Shell and John Davies:
Strain 21gr cells (CC-1690; mating type plus) and strain
6145c cells (CC-1691; mating type plus) that had been
growing on a light-dark cycle (13:11 L/D) in R-medium
(Sager and Granick) were separately transfered into
nitrogen-free medium at 8 hours into the light period
PolyA mRNA was purified from each sample every 2 hours for
the next 18 hours. The mRNA was pooled and used for cDNA
synthesis. The cDNA was directionally cloned into lambda
Sap II (Stratagene) in the EcoRI (5) and XhoRI (3))
sites. pBluescript II SK- plasmids were excised from the
lambda ZAP clones by superinfection with ExAssist
(Stratagene) phage. The library was normalized using
method 4 describbed in Bonaldo et al., (1996) Genome
Research 6: 791-806."
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                                                EST 30-SEP-2002
                                           BU655032 637 bp mRNA linear EST 30-SEP-200
1112117D10.yl C. reinhardtii CC-1690 (mt+), CC-1691 (mt-), Gamete
(normalized), Lambda Zap II Chlamydomonas reinhardtii cDNA, mRNA
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Chlamydomonas reinhardtii
Bukaryota; Viridiplantes; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                        Grossman, A., Chang, C.-W., Davies, J., Harris, E., Hauser, C.,
Lefebvre, P., McDermott, J.P., Shrager, J., Silflow, C. and Stern, D.
Lefebvre, P., McDermott, J.P., Shrager, J., Silflow, C. and Stern, D.
Lanalyses of the Chlamydomonas reinhardtii Genome: A Model.
Unicellular System for Analyzing Gene Function and Regulation in Vascular Plants. Project: 1112
Contact: Charles Hauser
Dunbulshad (2002)
Duke University
Dunke University
Duke University
Par: 919 613 8159
Fax: 919 613 8159
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100.0%; Score 15; DB 5; Length 637;
Best Local Similarity 100.0%; Pred. No. 1.1e+03;
Matches 15; Conservative 0; Mismatches 0; Indels
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Location/Qualifiers
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BU655032.1 GI:23367213
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bwzsy692 BRZ59692 Nori Satoh unpublished cDNA library, gastrula and neurula Ciona intestinalis cDNA clone cign021n07 5', mRNA sequence.
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1. .646
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/organism="Ciona intestinalis"
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/db xref="texcon:7719"
/clone="ciem835o12"
/tissue_type="whole animal"
/clone_lib="Yutaka Satou unpublished cDNA library, embryowhole animal"
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Ciona intestinalis
Eukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Eukaryota; Metazoa; Chondae; Ciona.

1 (bases 1 to 647)
Satoh,N., Satou,Y., Kohara,Y. and Shin-i,T.
Expressed genes in Ciona intestinalis
Unpublished (2000)
Contect: Noori Satoh
Department of Zoology
Kyoto University
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/dev_stage="tailbud embryo"
/clone_lib="Nori Satch unpublished cDNA library, tailbud
embryo"
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Tel: 81-75-753-4081
Fax: 81-75-705-1113
Email: satch@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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/db_xref="taxon:7719"
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SM Clona incestinalis
Eukaryota, Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.

1 (bases 1 to 646)
Satou, Y., Shin-i, T., Kohara, Y. and Satoh, N.
Expressed genes in Ciona intestinalis (2004)
Contact: Yutaka Satou
Department of Zoology
Kyotco University
Sakyo-ku, Kyotco, Kyoto 606-8502, Japan
Tel: 81-75-753-4095
Fax: 81-75-75-1113
                                                                                                                                                                                                  AV988282 Nori Satoh unpublished cDNA library, tailbud embryo Ciona intestinalis cDNA clone citb29m05 5', mRNA sequence.
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Ciona intestinalis
Eukarycia, Metazoa, Chordata, Urochordata, Ascidiacea, Enterogona,
Phlebobranchia, Cionidae, Ciona.
1 (bases 1 to 645)
Satoh, N., Satou, Y., Kohara, Y. and Shin-i, T.
Expressed genes in Ciona intestinalis
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Pred. No. 1.1e+03;
Mismatches 0;
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Fal: 81-75-75-4081
Fax: 81-75-705-1113
Email: satoh@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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                                     281 GCATGACGTTGAGCT 267
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Department of Zoology
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        GCATGACGTTGAGCT 15
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Enkaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
Phlebobranchia; Cionidae; Ciona.
Satoh, N., Satou, Y., Kohara, Y. and Shin-i, T.
Expressed genes in Ciona intestinalis
AL Unpublished (2000)
Contact: Nori Satoh
Department of Zology
Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
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Fax: 81-75-753-4081
Fax: 81-75-753-4081
Fax: 81-75-769-113
Email: satoh@ascidian.zool.kyoto-u.ac.jp.
Location/Qualiflers
1. 651
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E 1 (bases 1 to 641, Kohara, Y. and Satoh, N. Expressed genes in Ciona intestinalis (2002c)

L Unpublished (2002)

Contact: Nori Satoh
Department of Zoology
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Fax: 81-75-73-4081
Email: satch@ascidian.zool.kyoto-u.ac.jp.
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AV672198 I GI:10110197
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Search completed: September 3, 2005, 09:48:35 Job time : 2238.43 secs

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9; Search time 439.714 Seconds (without alignments) 223.403 Million cell updates/sec Total number of hits satisfying chosen parameters: 7338684 seqs, 3274456166 residues 3, 2005, 07:38:09 IDENTITY NUC Gapop 10.0 , Gapext 1.0 1 gcatgacgttgagct 15 US-10-789-536-6 15 September Title: Perfect score: Scoring table: Sequence: Searched: Run on:

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Database

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Sequence 41, Appli Sequence 5, Appli Sequence 5, Appli Sequence 6, Appli Sequence 6, Appli Sequence 6, Appli Sequence 5, Appli Description US-09-824-468-5 US-09-824-468-41 US-09-800-568-5 US-09-895-007A-5 US-09-90-313-5 US-09-415-142-6 US-09-888-326-65 SUMMARIES Length DB Query Match 100.0 100.0 100.0 100.0 Score Result ģ

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| 20              | 101                                    | 25              | 010           | 10           | 10             | 100           | 101             | 10              | 9 5                               | 2 7             | 11               | ::            | <b>1</b> :                           | 1:               | 17               | 11:              | ::                               | 11              | 11             | ;;              | 14             | 14             | 14              | 14              | † †            | . 4.            | 14              | 14                               | 4 4                                | 14             | 15             | 9 7                            | 16             | 17             | 7,1             | 11             | 17              | 18                    | 18            | 18            | 7 6                            | 19             | 13            | ۲<br>و د                         | 161           | 13            | 6 6           | 7 5           | 13             | 13            | 13             | 13            | 5 6                              | 13            | 20             |
| 15              | 12                                     | 12              | 15            | 12           | 12             | 15            | 12              | 12              | 15                                | 12              | 12               | 51.           | ۲.<br>در د                           | 12               | 15               | 15               |                                  | 12              | 15             | 15              | 15             | 12             | 15              | 15              | 15             | 15              | 15              | 15                               | 1                                  | 15             | 15             | ۲ ۲                            | 12             | 13             | ٠<br>1 ر        | 12             | 51              | 21 22                 | 12            | 5 1           |                                | 12             | 12            |                                  | 12            | 15            | 51.           | 1             | 15             | 12            | 15             | 15            | 15                               | 15            | 12             |
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5, Application US/09824468
| Patent No. US20020064515A1
| GENERAL INCORMATION:
| APPLICANT: Krieg, Arthur M. |
| APPLICANT: Weiner, George | TITLE OF INVENTION: Methods and Products for Stimulating the |
| TITLE OF INVENTION: Methods and Products for Stimulating the |
| TITLE OF INVENTION: Cytockines |
| TITLE OF INVENTION: Cytockines |
| FILE OF INVENTION: Cytockines 
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APPLICANT: Weiner, George
TITLE OF INVENTION: Methods and Products for Stimulating the
TITLE OF INVENTION: Immune System Using Immunotherapeutic Oligonucleotides and
TITLE OF INVENTION: Cytokines
FILE REPERBNE: C1039/7026/HGL
CURRENT APPLICATION NUMBER: US/09/824,468
FURRENT FILING DATE: 2001-04-02
PRIOR APPLICATION NUMBER: 09/286,098
PRIOR PILING DATE: 1999-04-02
NUMBER OF SEQ ID NOS: 105
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 41
LENGTH: 15
   Sequence 5, Appli
Sequence 66, Appl
Sequence 86, Appl
Sequence 766, App
Sequence 783, App
Sequence 815, App
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
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US-10-877-369-5
US-10-816-220-5
US-10-831-778-66
US-10-831-778-76
US-10-831-778-765
US-10-831-778-783
US-10-831-778-835
US-10-876-892-5
US-10-888-886-5
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; OTHER INFORMATION: Synthetic Sequence
US-09-824-468-5
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'Sequence 41, Application US/09824468

'Patent No. US20020064515A1

'GENERAL INFORMATION:
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US-09-824-468-5
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Sequence 5, Application US/09800266A

Sequence 5, Application US/09800266A

Sequence 5, Application US/09800266A

Sequence 7, Sequence 7, Sequence 7, Sequence 7, Sequence 8, Sequence 8, Sequence 8, Sequence 7, TITLE OF INVENTION: Immunostimulatory Nucleic Acids and 7 TITLE OF INVENTION: Cancer Medicament Combination Therapy for the Treatment of 7 TITLE OF INVENTION: Cancer Medicament Combination Therapy for the Treatment of 7 TITLE OF INVENTION: Cancer 7, TITLE OF INVENTION: Cancer 8, Sequence 7, Sequence
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Patent No. US20020165178A1

GENERAL INFORMATION:

APPLICANT: Schetter, Christian

APPLICANT: Bratzler, Robert L.

APPLICANT: Petersen, Deanna M.

TITLE OF INVENTION: IMMUNOSTIMULATORY NUCLEIC ACIDS FOR THE

TITLE OF INVENTION: TREATMENT OF ANEMIA, THROMBOCYTOPENIA, AND NEUTROPENIA

TITLE OF INVENTION: TREATMENT OF ANEMIA, THROMBOCYTOPENIA, PLIC REFERENCE: C1041/7014 (ANG)

CURRENT FILING DATE: 2001-06-28

PRIOR APPLICATION NUMBER: US 60/214,368

PRIOR FILING DATE: 2000-06-28

NUMBER OF SEQ ID NOS: 133

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 5

LENGTH: 15
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100.0%; Score 15; DB 9; Length 15; 100.0%; Pred. No. 1.9e+02;
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Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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Pred. No. 1.9e+02;
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ORGANISM: Artificial Sequence
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Best Local Similarity 100.0
Matches 15; Conservative
    Query Match
Best Local Similarity 100.
Matches 15; Conservative
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Sequence 65, Application US/0988326;
Publication No. US20030026801A1
GENERAL INFORMATION:
APPLICANT: Weiner, George
TITUE OF INVENTION: Methods for Enhancing Antibody-Induced
TITUE OF INVENTION: Cell Lysis and Treating Cancer;
FILE REFERENCE: C1039/7052 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT APPLICATION NUMBER: US/09/888,326;
PRIOR FILING DATE: 2000-06-22;
PRIOR FILING DATE: 2000-06-22;
NUMBER: OF SEQ ID NOS: 848
SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Methods for Enhancing Antibody-Induced
TITLE OF INVENTION: Cell Lysis and Treating Cancer
TITLE OF INVENTION: Cell Lysis and Treating Cancer
TITLE REFERENCE: C1039/7052 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT FILING DATE: 2001-06-22
PRIOR PILING DATE: 2000-06-22
NUMBER: OF SEQ ID NOS: 848
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 319
LENGTH: 15
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100.0%; Score 15; DB 10;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: Synthetic oligonucleotide; NAME/KEY: misc_feature; LOCATION: (0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ...(0) ..
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 319, Application US/09888326; Publication No. US20030026801A1; GENERAL INFORMATION:
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US-09-888-326-320
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US-09-888-326-319
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Publication No. US2003002678241;
GENERAL INFORMATION:
APPLICANT: Krieg, Arthur M.;
APPLICANT: Steinberg, Alfred D.;
TITLE OF INVENTION: IMMUNMODULATORY OLIGONUCLEOTIDES;
FILE REFERENCE: C1039/7029;
CURRENT APPLICATION NUMBER: US/09/415,142;
CURRENT FILING DATE: 1995-10-09;
NUMBER OF SEQ ID NOS: 27;
SOFTWARE: PastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Breizler, Robert L.
APPLICANT: Breizler, Boanna M.
APPLICANT: Petersen, Deanna M.
TITLE OF INVENTION: Nucleic Acids for the Prevention and
TITLE OF INVENTION: Treatment of Gastric Ulcers
FILE REPERENCE: C1037/7019 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/920,313
CURRENT FILING DATE: 2001-08-01
PRIOR FILING DATE: 2001-08-08
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 148
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 5
LENGTH: 15
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, OTHER INFORMATION: Synthetic Sequence US-09-920-313-5
                                                                                                                                                                                                                                                                              ; Sequence 5, Application US/09920313; Publication No. US20020198165A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Artificial Sequence
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Best Local Similarity 100.0
Matches 15; Conservative
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US-09-888-326-65/c
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APPLICANT: Kline, Joan N.
APPLICANT: Kline, Joal N.
APPLICANT: Kline, Joal N.
APPLICANT: Kline, Joal N.
APPLICANT: Kline, Joal N.
APPLICANT: Klinman, Dennia
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules
FILE REFERENCE: C1039/7048 (AMS);
CURRENT APPLICATION NUMBER: US/09/818,918
CURRENT APPLICATION NUMBER: US 08/276,358
FRIOR APPLICATION NUMBER: US 08/276,358
FRIOR APPLICATION NUMBER: US 08/386,063
FRIOR PILING DATE: 1994-07-15
FRIOR APPLICATION NUMBER: US 08/386,652
FRIOR APPLICATION NUMBER: US 08/38,652
                                                 GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Methods for Enhancing Antibody-Induced
TITLE OF INVENTION: Cell Lysis and Treating Cancer
FILE REFERENCE: C1039/7052 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT APPLICATION NUMBER: US 60/213,346
FRIOR PILING DATE: 2000-06-22
NUMBER OF SEQ ID NOS: 848
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 322
LENGTH: 15

"MORTH: 15
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100.0%; Score 15; DB 10;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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) NAME/KEY: misc_feature

| LOCATION: (0) ... (0)

| OTHER INFORMATION: phosphorothicate backbone

US-09-888-326-322
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Publication No. US20030026801A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GCATGACGTTGAGCT 15
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US-09-818-918-16
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NAME/KEY: misc_feature
LOCATION: (0)...(0)
COTHER INFORMATION: chimeric phosphorothioate/phosphodiester backbone
OTHER INFORMATION: with phosphorothioate at 5' and 3' ends
US-09-888-326-320
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                          GENERAL INFORMATION:
APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TYTLE OF INVENTION:
TITLE OF INVENTION: Gell Lysis and Treating Cancer;
TITLE OF INVENTION WHERE: US/09/888,326
CURRENT FILING DATE: 2001-06-22
CURRENT FILING DATE: 2000-06-22
NUMBER OF SEQ ID NOS: 848
SEQ ID NOS: 848
ILBNGTH: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Weiner, George
APPLICANT: Hartmann, Gunther
TITLE OF INVENTION: Methods for Enhancing Antibody-Induced
TITLE OF INVENTION: Cell Lysis and Treating Cancer
TITLE OF INVENTION: Cell Lysis and Treating Cancer
TITLE NEFERENCE: C1039/7062 (AWS)
CURRENT APPLICATION NUMBER: US/09/888,326
CURRENT FILING DATE: 2001-06-22
PRIOR FILING DATE: 2000-06-22
NUMBER: OF SEQ ID NOS: 848
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 321
LENGTH: 15
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100.0%; Score 15; DB 10;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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CTHER INFORMATION: phosphodiester backbone US-09-888-326-321
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; Sequence 321, Application US/0988326
; Publication No. US20030026801A1
; GENERAL INFORMATION:
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US-09-888-326-322
; Sequence 322, Application US/09888326
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Artificial Sequence
      Publication No. US20030026801A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GCATGACGTTGAGCT 15
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ses 15; Conservative
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JOURGALL INCOMENTATION:
JAPPLICANT: Krieg, Arthur
APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Stainberg, Alfred
TITLE OF INVENTION: Methods and Products for Treating HIV Infection
TITLE OF INVENTION: Wethods and Products for Treating HIV Infection
FILE REFERENCE: C1039/7053(HCL)
CURRENT PELLING DATE: 0001-001-06
PRIOR APPLICATION NUMBER: US 08/276,358
PRIOR APPLICATION NUMBER: US 09/415,142
SOFTWARE PARENT PARENT PS99-10-09
SOFTWARE PARENT PARENT PS99-10-09
SOFTWARE: PARENT PARENT PS99-10-09
SEQUID NO 6
LENGTH: 15
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100.0%; Pred. No. 1.9e+02;
tive 0; Mismatches 0;
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OTHER INFORMATION: Synthetic Oligonucleotide
                                                                                                  Sequence 6, Application US/09931583 Publication No. US20030050263A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Artificial Sequence
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Best Local Similarity
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US-09-776-479-86
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                                                                                                                                               APPLICANT: Kline, Joel N.
APPLICANT: Kline, Joel N.
APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
APPLICANT: Klinman, Dennis
I APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: Immunoclimulatory Nucleic Acid Molecules
FILE REFERENCE: Cl039/7048 (AMS)
CURRENT APPLICATION NUMBER: US/09/818,918
CURRENT PILING DATE: 1994-07-15
PRIOR APPLICATION NUMBER: US 08/276,358
PRIOR PELLING DATE: 1994-07-15
PRIOR PELLING DATE: 1995-02-07
PRIOR PELLING DATE: 1995-02-07
PRIOR PELLING DATE: 1996-10-30
NUMBER OF SEQ ID NOS: 56
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 16
LENGTH: 15
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Publication No. US20030050261A1
GENERAL INFORMATION:
APPLICANT: Kritey, Arthur M.
APPLICANT: Kritey, Joel N.
APPLICANT: Kline, Joel N.
APPLICANT: Steinberg, Alfred D.
TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules
FILE REFERENCE: C1039/7048 (AMS)
CURRENT FILING DATE: 2001-03-27
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100.0%; Score 15; DB 10; Length 15;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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. OTHER INFORMATION: Synthetic oligonucleotide
US-09-818-918-48
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PRIOR APPLICATION NUMBER: US 08/276,358

PRIOR FILING DATE: 1994-07-15

PRIOR PLILING DATE: 1994-07-15

PRIOR PLILING DATE: 1995-02-07

PRIOR PLILING DATE: 1995-02-07

PRIOR APPLICATION NUMBER: US 08/738,652

PRIOR FILING DATE: 1996-10-30

NUMBER OF SEQ ID NOS: 56

SOFTWARE: FastSEQ for Windows Version 3.0

INNORMATION OF 1 PRIOR 1 PRIO
Sequence 16, Application US/09818918
Publication No. US20030050261A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Artificial Sequence
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                                         RESULT 16
US-09-776-479-66
; Sequence 66, Application US/09776479
; Publication No. US20030087848A1
; GENERAL INFORMATION:
; APPLICANT: Bratzler, Robert L.
; APPLICANT: Petersen, Deanna M.
; APPLICANT: Petersen, Deanna M.
; APPLICANT: Pouron, Yves
; TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the
; TITLE OF INVENTION: Treatment of Asthma and Allergy
FILE REFERENCE: C10377013 (HCL/MAT)
; CURRENT APPLICATION NUMBER: US/09/776,479
; CURRENT FILING DATE: 2000-02-02
; PRIOR APPLICATION NUMBER: US 60/179,991
; PRIOR PILING DATE: 2000-02-03
; NUMBER OF SEQ ID NOS: 1093
; SOFTWARE: FastSEQ for Windows Version 3.0
; LENGTH: 15
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100.0%; Pred. No. 1.9e+02;
tive 0; Mismatches 0;
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1 GCATGACGTTGAGCT 15
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Best Local Similarity 100.0
Matches 15; Conservative
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TYPE: DNA
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Sequence 766, Application US/09776479

Publication No. US20030087848A1

GENERAL INFORMATION:

APPLICANT: Bratzler, Robert L.

APPLICANT: Petersen, Deanna M.

APPLICANT: Petersen, Deanna M.

TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: Treatment of Asthma and Allergy FILE REFERENCE: C1037/7013 (HCL/MAT)

CURRENT APPLICATION NUMBER: US/09/776,479

CURRENT FILING DATE: 2000-02-02

FRIOR PILING DATE: 2000-02-03

NUMBER OF SEQ ID NOS: 1093

SOFTWARE: FastSEQ for Windows Version 3.0

LENGTH: 15
                                                            APPLICANT: BETAILER, Robert L.
APPLICANT: Petersen, Deanna M.
APPLICANT: Fouron, Yves
TITLE OF INVENTION: Treatment of Asthma and Allergy
FILE REFERENCE: C103/7013 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/776,479
PRIOR APPLICATION NUMBER: US 60/176,479
PRIOR APPLICATION NUMBER: US 60/176,991
PRIOR APPLICATION NUMBER: US 60/176,991
PRIOR SPECIAL OF SEQ ID NOS: 1093
NUMBER OF SEQ ID NOS: 1093
SOFTWARE: FastSEQ for Windows Version 3.0
LENGTH: 15
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100.0%; Pred. No. 1.9e+02;
tive 0; Mismatches 0;
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COTHER INFORMATION: Synthetic Sequence US-09-776-479-766
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Sequence 783, Application US/09776479
Publication No. US20030087848A1
GENERAL INFORMATION:
APPLICANT: Bratzler, Robert L.
APPLICANT: Petersen, Deanna M.
Sequence 86, Application US/09776479
Publication No. US20030087848A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Artificial Sequence
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ORGANISM: Artificial Sequence
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Best Local Similarity 100.0
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Matches 15; Conservative
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US-09-776-479-766
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TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the
TITLE OF INVENTION: Tractment of Asthma and Allergy
FILE REFERENCE: C1037/7013 (HCL/MAT)
CURRENT APPLICATION NUMBER: US/09/776,479
CURRENT APPLICATION NUMBER: US 60/179,991
PRIOR APPLICATION NUMBER: US 60/179,991
PRIOR APPLICATION NUMBER: US 60/179,991
PRIOR APPLICATION NUMBER: US 60/179,991
SEQ ID NOS: 1093
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 783
LENGTH: 15
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US-05-954-987B-53

Sequence 53, Application US/09954987B

Publication No. US20030104523A1

GENERAL INFORMATION:

APPLICANT: Stefan Bauer

APPLICANT: Herman Wagner

TITLE OF INVENTION: PROCESS FOR HIGH THROUGHPUT SCREENING OF

TITLE OF INVENTION: CpG-BASED IMMUNO-AGONIST/ANTAGONIST

TITLE OF INVENTION: USP-0598850 INVENTION: CGG-BASED IMMUNO-AGONIST/ANTAGONIST

CURRENT APPLICATION NUMBER: US/09/954,987B
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100.0%; Score 15; DB 10;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Synthetic Sequence
US-09-776-479-783
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                                                                                                                                                                                                                                                                           ORGANISM: Artificial Sequence FEATURE:
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PRIOR APPLICATION NUMBER: 60/209,797
PRIOR FILING DATE: 2000-06-07
NUMBER OF SEQ ID NOS: 620
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 95
LENGTH: 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: MOND, JAMES J.

APPLICANT: FLORA, MICHAEL

APPLICANT: KLINMAN, DENNIS M.

TITLE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES

FILE REFERENCE: 07787.0042-0

CURRENT APPLICATION NUMBER: 08/09/874,991C

CURRENT FILING DATE: 2000-06-07

PRIOR PILING DATE: 2000-06-07

NUMBER OF SEQ ID NOS: 620

SOFTWARE: PATENTIN VOR: 2.1

SEQ ID NO 29

LENGTH: 15
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APPLICANT: KLINMAN, DENNIS M.
TITLE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES
FILE REPERENCE: 07787.0042-0
CURRENT APPLICATION NUMBER: US/09/874,991C
CURRENT FILING DATE: 2001-06-07
                                                                                                                                                                                                                                                                                                                                                                                                           Score 15; DB 10; Length 15;
Pred. No. 1.9e+02;
Mismatches 0; Indels
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100.0%; Score 15; DB 11;
Best Local Similarity 100.0%; Pred. No. 1.9e+02;
Matches 15; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                              ), OTHER INFORMATION: Synthetic oligonucleotide US-09-954-9878-53
                   PRIOR APPLICATION NUMBER: US 60/233,035
PRIOR PILING DATE: 2000-09-15
PRIOR APPLICATION NUMBER: US 60/263,657
PRIOR FILING DATE: 2001-01-23
PRIOR PILING DATE: 2001-05-17
PRIOR PILING DATE: 2001-05-17
PRIOR PILING DATE: 2001-05-17
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 230
SOFTWARE: FRESEQ for Windows Version 3.0
SSERIGHT: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 29, Application US/09874991C Publication No. US20040052763A1 GENERAL INFORMATION:
APPLICANT: MOND, JAMES J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 95, Application US/09874991C Publication No. US20040052763A1 GENERAL INFORMATION:
APPLICANT: MOND, JAMES J.
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.0%; So
Best Local Similarity 100.0%; Po
Matches 15; Conservative 0;
          2001-09-17
                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Artificial Sequence
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US-09-874-991C-95
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US-09-874-991C-29
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                                                  ; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic HDR
US-09-874-991C-95
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APPLICANT: PLORA, MICHAEL
APPLICANT: FLORA, MICHAEL
APPLICANT: FLORA, MICHAEL
APPLICANT: KIJNAM, DENNIS M.
TITLE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES
FILE REFERENCE: 07787.0042-0
CURRENT PELING DATE: 2001-06-07
PRIOR APPLICATION NUMBER: 60/209,797
PRIOR APPLICATION NUMBER: 60/209,797
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SECOND SECOND NOS: 620
SOFTWARE: PATENTIN Ver. 2.1
SEQID NO 116
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Sequence 140, Application US/09874991C
Sequence 140, Application US/09874991C
Sequence 140, Daniel US-020040052763A1
GENERAL INFORMATION:
APPLICANT: FLORA, MICHAEL
APPLICANT: KLINMAN, DENNIS M.
TITLE OF INVERTION: IMMUNOSTINULATORY RNA/DNA HYBRID MOLECULES
FILE REFERENCE: 07787.0042-0
                                                                                                                                                Length 15;
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                                                                                                                                                                                                                                                                                                                                                                                                             US-09-874-991C-116
Sequence 116, Application US/09874991C
; Publication No. US20040052763A1
; GENERAL INFORMATION:
TYPE: DNA
ORGANISM: Artificial Sequence
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                     ; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic HDR
US-09-874-991C-140
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US-09-874-991C-188
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US-09-874-991C-167
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Publication No. US2004062263A1

GENERAL INFORMATION:

APPLICANT: MOND, JAMES J.

APPLICANT: MOND, JAMES J.

APPLICANT: KLINWAN, DENNIS M.

TILE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES

FILE REFERENCE: 07187 01042-0

CURRENT FILING DATE: 2001-06-07

PRIOR APPLICATION NUMBER: 60/209,797

PRIOR PILING DATE: 2000-06-07

NUMBER OF SEQ ID NOS: 620

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 188

LENGTH: 15
                                                                                                                                                                                                                                                                                                            Sequence 167, Application US/09874991C

Publication No. US20040052763A1

GENERAL INFORMATION:

APPLICANT: MOND, JAMES J.

APPLICANT: FLORA, MICHAEL

APPLICANT: KLINWAN, DENNIS M.

TILE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES

FILE REFERENCE: 07187 .0042-0

CURRENT FILING DATE: 2001-06-07

PRIOR APPLICATION NUMBER: 60/209,797

PRIOR FILING DATE: 2000-06-07

NUMBER OF SEQ ID NOS: 620

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 167

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ORGANISM: Artificial Sequence
ORGANISM: Artificial Sequence
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, OTHER INFORMATION: Description of Artificial Sequence: Synthetic HDR
US-09-874-991C-427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: Description of Artificial Sequence: Synthetic HDR US-09-874-991C-408
US-09-874-991C-408
US-09-874-991C-408
i Sequence 408, Application US/09874991C
j Publication No. US20040052763A1
GENERAL INFORMATION:
APPLICANT: MOND, JAMES J.
APPLICANT: KIINMAN, DENNIS M.
TITLE OF INVENTION: IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES
FILE REFERENCE: 07787.0042-0
CURRENT APPLICATION NUMBER: US/09/874,991C
CURRENT FILING DATE: 2001-06-07
PRIOR PILING DATE: 2000-06-07
PRIOR FILING DATE: 2000-06-07
NUMBER OF SEQ ID NOS: 620
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 408
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APPLICANT: FLORA, MICHAEL
APPLICANT: FLORA, MICHAEL
APPLICANT: KLINMAN, DENNIS M.
TITLE OF INVENTION IMMUNOSTIMULATORY RNA/DNA HYBRID MOLECULES
FILE REFERENCE: 07787.0042-0
CURRENT APPLICATION NUMBER: US/09/874,991C
CURRENT FILING DATE: 2001-06-07
PRIOR APPLICATION NUMBER: 60/209,797
PRIOR APPLICATION NUMBER: 60/209,797
NUMBER OF SEQ ID NOS: 620
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 427
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ORGANISM: Artificial Sequence
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ORGANISM: Artificial Sequence
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RESULT 30
US-09-776-479-66

i Sequence 66, Application US/09776479

sequence 66, Application US/09776479

publication No. US20040067902A9

i GENERAL INFORMATION:
    APPLICANT: Petersler, Robert L.
    APPLICANT: Petersler, Deanna M.
    APPLICANT: Petersler, Yees
    TITLE OF INVENTION: Immunostimulatory Nucleic Acids for the TITLE OF INVENTION: Treatment of Asthma and Allergy
    FILE REFERENCE: Cl03777013 (HCL/MAT)
    CURRENT APPLICATION NUMBER: US/09/776,479
    CURRENT FILING DATE: 2000-02-02
    PRIOR FILING DATE: 2000-02-03
    NUMBER OF SEQ ID NOS: 1093
    SOFTWARE: FastSEQ for Windows Version 3.0
    LENGTH: 15
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ORGANISM: Artificial Sequence
FEATURE:
COTHER INFORMATION: Synthetic Sequence
US-09-776-479-66
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Search completed: September 3, 2005, 10:09:05 Job time : 440.714 secs

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1. /cgn2_6/ptodata/1/ina/5A_COMB.seq:*

2. /cgn2_6/ptodata/1/ina/5B_COMB.seq:*

3. /cgn2_6/ptodata/1/ina/6A_COMB.seq:*

3. /cgn2_6/ptodata/1/ina/B_COMB.seq:*

3. /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*

3. /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*

3. /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
GenCore version 5.1.6
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|            | 22   | Ξ:       | 86.7     | 1551    | ٦.       | US-U8-45/-2/4A-1<br>116-00-457-2748-27 | מונים ביו | 27. Appl |
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| o .        | 0 10 | 3 5      |          | 58      |          | 7-274A-29                              |           | 29,      |
|            | . 60 | 13       |          | 80      |          | PCT-US95-05758-29                      | Sequence  | 29,      |
|            | 9 0  | 13       |          | 3       |          | 4-238-131                              |           | 131      |
| U          | 09   | 13       | 6        | 28      |          | 9-016-3897                             |           | 383      |
| ,          | 61   | 13       | ů.       | 682     |          | 9-016-16                               |           | 166      |
|            | 62   | 13       | Ġ.       | 791     |          | 9-016-1193                             |           | 113      |
|            | 63   | 13       | Ġ        | 5793    |          | 9-016-1692                             | Sequence  | 169      |
| υ          | 64   | 13       | Ġ        | 12112   |          | 9-016-1563                             |           | Loosy, A |
|            | 65   | 13       | Ġ.       | , c     | <b>.</b> | 03-840A-                               | Sequence  | •        |
| υ          | 96   | <u> </u> |          | 403/0   |          | 03-840A-                               | ğ         | 1. Appl  |
| ,          | 200  | î -      |          | 41152   |          | 03-840A-                               | ũ         | 1. Appl  |
| <b>)</b> ( | 0 0  | ຳ,       | . 4      | 205     | 7        | 3-999C-3                               | equenc    | 30922, A |
| י כ        | 200  | : ~      |          | 300     |          | 9-611A-9                               | equenc    |          |
| C          | 7.5  |          |          | 71      |          | 6-171E-163                             | equenc    | 63       |
| O          | 72   | 'n       | 'n       | . 71    |          | 1-986A-1                               | eque      | 9        |
| υ          | 73   | ς.       | ä        | 77      |          | 7-527A-21                              | edneuc    | 2        |
| O          | 74   | ď.       | ĸ.       | 77      |          | 1-710-213                              | equenc    | 2:       |
| O          | 75   | 'n       | ai,      | 77      |          | -09537-2                               | equenc    | 76       |
| υ          | 76   | 'n,      | oi o     | 76      |          | 07-56/-7                               | Sequence  | Š        |
| υ (        | 77   | . c      | vi c     | 7 6     |          | -094558-20                             | ednenc    | Ö        |
| U          | D C  | 4 6      | i c      | , [     |          | 3-9990-298                             | ednenc    | 36       |
| υ          | ν c  | 40       | • •      | 264     |          | 3-294A-3369                            | equenc    | 36       |
|            | 9 6  |          |          | 266     |          | 3-294A-347                             | equenc    | 4        |
| O          | 82   |          | Ŕ        | 279     |          | 2-540-5910                             | equen     | 6        |
|            | 83   | 12.4     | 'n       | 280     | 4        | US-09-270-767-30008                    | oue.      | 30008, A |
| υ          | 84   | N        | ö        | 282     |          | 9-039A-90                              | equenc    | 38       |
|            | 82   | 2        | oi o     | 300     |          | 7-433-124                              | equen     | , a      |
| יט         | 9 1  | N (      | 'n٥      | 212     |          | 116-10-237-331-33                      | chience   | 'n       |
| v          | 60   | 4 0      | i c      | 416     |          | 3-999C-289                             | equenc    | . 89     |
|            | 0 0  | 40       |          | 429     |          | 2-991A-3299                            | equen     | 8        |
| U          | 000  | 12.4     |          | 429     |          | 2-991A-152                             | equen     | 2        |
| 1          |      |          |          |         |          |  |           |          |
|            |      |          |          |         |          | GENERAL                                |           |          |

ALIGNMENTS

RESULT 1
US-08-386-063-6
; Sequence 6, Application US/08386063
; Patent No. 6008200
; GENERAL INFORMATION:

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ORGANISM: Artificial Sequence
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              TELEFAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS:
LENGTH: 15 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15; Conservative
                                                                                                                                                      , MOLECULE TYPE: DNA
US-08-386-063-6
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Best Local Similarity
Matches 15; Conserv
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Best Local Similarity
                                                                                                                                         TOPOLOGY:
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Patent No. 6194388
GENERAL INFORMATION:
APPLICANT: Archur M. Krieg, M.D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD
STREET: 600 STATE STREET, SUITE 510
APPLICANT: Arthur M. Krieg, M.D.
TITLE OF INVENTION: IMMUNOMODULATORY OLIGONUCLEOTIDES
NUMBERS OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: LAHIVE & COCKFIELD
STREET: 60 STATE STREET, SUITE 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 15; DB
100.0%; Pred. No. 23;
Live 0; Mismatches
                                                                                        STREET: 60 STATE STREET, SUITE 510
CITY: BOSTON
STATE: MASSACHUSETTS
COUNTRY: USA
ZIP: 02109-1875
COMPUTER: READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: ASCII text
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/386,063
FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: ARNOLD, BETH E.
REGISTRATION NUMBER: 35,430
REFERENCE/DOCKET NUMBER: 35,430
REFERENCE/DOCKET NUMBER: UIZ-013CP
TELECHONE: (617)227-7400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: BOSTON
STATE: MASSACHUSETTS
COUNTY: USA
ZIP: 02109-1875
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: OSSTEM: PC-DOS/MS-DOS
SOFTWARE: ASCII text
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/386,063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: ARNOLD, BETH E.
REGISTRATION NUMBER: 35,430
REFERENCE/DOCKET NUMBER: UIZ-013CP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 6: SEQUENCE CHARACTERISTICS: LENGTH: 15 base pairs TYPE: nucleic acid STRANDEDNESS: single
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Best Local Similarity 100.0
warches 15; Conservative
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US-08-386-063-6
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| Sequence 16, Application US/08738652B
| Sequence 16, Application US/08738652B
| Patent NO. 6207646
| GENERAL INFORMATION:
| APPLICANT: Krieg, Arthur M. |
| TILE OF INVENTION: Immunostimulatory Nucleic Acid Molecules File REFERENCE: C1039/7004 HCL |
| CURRENT APPLICATION NUMBER: US/08/738,652B |
| CURRENT FILING DATE: 1994-10-315 |
| BARLIER PILING DATE: 1994-07-15 |
| BARLIER PILING DATE: 1994-07-15 |
| BARLIER FILING DATE: 1995-07-7 |
| NUMBER OF SEQ ID NOS: 55 |
| SEQ ID NO 16 |
| SEQ ID NO 16 |
| LENGTH: 15 |
| LENGTH
100.0%; Score 15; DB 3; Length 15; ilarity 100.0%; Pred. No. 23; Conservative 0; Mismatches 0; Indels
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Sequence 41, Application US/09286098

Sequence 41, Application US/09286098

Sequence 41, Application US/09286098

GENERAL INFORMATION:
APPLICANT: Watieg, Arthur M.
TITLE OF INVENTION: Immune System Using Immunotherapeutic Oligonucleotides and TITLE OF INVENTION: Immune System Using Immunotherapeutic Oligonucleotides and TITLE OF INVENTION: Cytokines
TITLE OF INVENTION: Cytokines
FILE OF INVENTION: UNBER: US/09/286,098
CURRENT FILING DATE: 1999-04-02

BARLIER APPLICATION NUMBER: US 60/080,729

BARLIER FILING DATE: 1998-04-03

NUMBER OF SEQ ID NOS: 105

SOFTWARE: FBSESEQ for Windows Version 3.0

SEQ ID NO 41

LENGTH: 15
                                                                                                                                                                            VB-09-5

Sequence 5, Application US/09286098

Sequence 5, Application US/09286098

Patent No. 6218371

SERENBAL INFORMATION:

APPLICANT: Krieg, Arthur M.

APPLICANT: Weiner, George

TITLE OF INVENTION: Methods and Products for Stimulating the

TITLE OF INVENTION: Methods and Products for Stimulating the

TITLE OF INVENTION: Methods and Products for Stimulating the

TITLE OF INVENTION: MUMBER: US/92286,098

FILE REFERENCE: C1039/7026/HCL

CURRENT PELLING DATE: 1999-04-02

EARLIER APPLICATION NUMBER: US 60/080,729

SEALIER ILING DATE: 1998-04-03
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100.0%; Score 15; DB 3; Length 15;
Best Local Similarity 100.0%; Pred. No. 23;
Matches 15; Conservative 0; Mismatches 0; Indels
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Mismatches
    Mismatches
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100.0%; Pred. No. 3
tive 0; Mismatch
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 5
LENCTH: 15
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                                                                                  1 GCATGACGTTGAGCT 15
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Best Local Similarity 100.
Matches 15, Conservative
    15; Conservative
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US-09-286-098-41
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Fatent No. 6214806

GENERAL INFORMATION:
APPLICANT: Schwartz, David A.
TITLE OF INVENTION: USE OF NUCLEIC ACIDS CONTAINING
TITLE OF INVENTION: USE OF NUCLEIC ACIDS CONTAINING
TITLE OF INVENTION: UNBETHYLATED COG DINUCLEOTIDE IN THE TREATMENT OF
TITLE OF INVENTION: UNBETHYLATED DISORDERS
FILE REFERENCE: C1039/7011

CURRENT APPLICATION NUMBER: 09/03/030,701B
CURRENT FILING DATE: 1990-02-25
FRIOR APPLICATION NUMBER: 60/039,405
FRIOR FILING DATE: 1997-02-28
NUMBER OF SEQ ID NOS: 65
SOFTWARE: FastSEQ for Windows Version 3.0
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; Squence 48, Application US/08738652B
; Patent No. 6207646
; GENERAL INFORMATION:
    APPLICANT: Krieg, Arthur M.
    TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules
    TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules
    FILE REFERENCE: C1039/7004 HCL
    CURRENT PAPLICATION NUMBER: US/08/738,652B
    CURRENT FILING DATE: 1994-07-15
    EARLIER PILICATION NUMBER: US 08/276,358
    EARLIER PILICATION NUMBER: US 08/386,063
    EARLIER PILICATION NUMBER: US 08/386,063
    EARLIER PILICATION NUMBER: US 08/386,063
    SAFULER FILING DATE: 1995-02-07
    NUMBER OF SEQ ID NOS: 55
    SOFTWARE: FastSEQ for Windows Version 3.0
    SEQ ID NO 48
    LENGTH: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uery Match
Best Local Similarity 100.0%; Score 15; DB 3; Length 15;
Matches 15; Conservative 0; Mismatches ما تعلقه
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23;
                                                                                                   Score 15; DB 3;
Pred. No. 23;
         ; FEATURE:
; OTHER INFORMATION: Synthetic oligonucleotide
US-08-738-652-16
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                                                                                                   Query Match
100.0%; Score 15; DB
Best Local Similarity 100.0%; Pred. No. 23;
Matches 15; Conservative 0; Mismatches
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Pred. No.
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Best Local Similarity
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LENGTH: 15
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Gaps

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Query Match 100.0%; Score 15; DB 3; Length 15; Best Local Similarity 100.0%; Pred. No. 23; Matches 15; Conservative 0; Mismatches 0; Indels
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US-09-325-193A-5
PRIOR FILING DATE: 1997-03-10
NUMBER OF SEQ ID NOS: 98
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 5
LENGTH: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ó,
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ORGANISM: Artificial Sequence
                                                                                                                                                                                                  ORGANISM: Artificial Sequence
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Best Local Similarity 100.0
                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                       FEATURE:
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WS-09-325-193A-5

Sequence 5, Application US/09325193A

Patent No. 6406705

GENERAL INFORMATION:

APPLICANT: Davis, Heather L.

APPLICANT: Schorr, Joachim

TITLE OF INVENTION: Unmethylated CpG Dinucleotide as an Adjuvant

TITLE OF INVENTION: Unmethylated CpG Dinucleotide as an Adjuvant

FILE REFERENCE: C1039/7025/HCL

CURRENT APPLICATION NUMBER: US/09/325,193A

CURRENT FILING DATE: 1999-06-03

PRIOR FILING DATE: 1998-09-16

PRIOR APPLICATION NUMBER: US 09/154,614

PRIOR APPLICATION NUMBER: US 09/154,614

PRIOR APPLICATION NUMBER: US 06/040,376
                                                                                                                                                                              PREERL INFORMATION:
APPLICANT: Krieg et al.,
TITLE OF INVENTION: IMMUNOSTIMULATORY NUCLEIC ACID MOLECULES
NUMBER OF SEQUENCES: 111
CORRESPONDENCE ADDRESS: 112
CORRESPONDENCE ADDRESS: 113
CORRESPONDENCE ADDRESS: 114
STATE: CA
COUNTRY: La Jolla
STATE: CA
COUNTRY: USA
COUNTRY: USA
COUNTRY: USA
COUNTRY: USA
COUNTRY: USA
COUNTRY: WEADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER PADLICATION DATA:
APPLICATION NUMBER: US/08/860,774
FILING DATE: 30-October-1997
CLASSIPICATION: 514
PRIOR APPLICATION NUMBER: US. Serial No. 6239116 08/738,652
FILING DATE: October 30, 1996
CLASSIPICATION NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347
REGISTRATION NUMBER: 38,347
REGISTRATION NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347
REGISTRATION SEQ ID NO: 6:
CLASSIPICATION NUMBER: 38,347
REDESRANCE/DOCKET NUMBER: 38,347

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                                                                                                                                  Sequence 6, Application US/08960774
Patent No. 6239116
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hes 15; Conservative
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US-08-960-774-6
                                                                                                    US-08-960-774-6
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Matches
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US-09-191-170-5

US-09-191-170-5

Sequence 5, Application US/09191170

Patent No. 6429199

GENERAL INFORMATION:

APPLICANT: Krieg, Arthur M.

APPLICANT: Hartmann, Gunther

TITLE OF INVENTION: Immunostimulatory Nucleic Acid Molecules

TITLE OF INVENTION: for Activating Dendritic Cells

FILE REFERENCE: C1039/70117

CURRENT APPLICATION NUMBER: US/09/191,170

CURRENT FILING DATE: 1998-11-13

EARLIER FILING DATE: 1999-10-30

EARLIER APPLICATION NUMBER: US 08/738,652

EARLIER APPLICATION NUMBER: US 08/738,652

EARLIER PILING DATE: 1995-02-07

EARLIER PILING DATE: 1995-02-07

EARLIER FILING DATE: 1994-07-15

NUMBER OF SEQ ID NOS: 99

SOFTWARE: FastSEQ for Windows Version 3.0

SEGTWARE: 15
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Patent No. 6653292

GENERAL INFORMATION:

APPLICANT: Krieg, Arthur M.

TITLE OF INVENTION: Immunostimulatory Oligonucleotides

TITLE REFERENCE: C1039/7021/HCL

CURRENT APPLICATION NUMBER: US/09/337,619

CURRENT FILING DATE: 1999-06-21

EARLIER PEPLICATION NUMBER: US 08/960,774

EARLIER APPLICATION NUMBER: US 08/738,652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; OTHER INFORMATION: synthetic oligonucleotide US-09-191-170-5
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US-09-337-619-6
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Query Match
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; Betent No. 6812339
; General No. 681239
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
; FILE REPRENCE: CLOO1307
; CURRENT APPLICATION NUMBER: US/09/949,016
; CURRENT FILING DATE: 2000-04-14
; PRIOR PAPLICATION NUMBER: 60/231,768
; PRIOR PILING DATE: 2000-10-20
; PRIOR PILING DATE: 2000-10-03
; PRIOR PILING DATE: 2000-09-08
; NUMBER OF SEQ ID NOS: 207012
; SOFTHARE: FBSEESEQ for Windows Version 4.0
; SEQ ID NO 16327
; LENGTH: 31573
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Patent No. 6833447

GENERAL INFORMATION:
APPLICANT: Goldman, Barry S.
APPLICANT: Hinkle, Gregory J.
APPLICANT: Miegand, Roger C.
APPLICANT: Wiegand, Roger C.
APPLICANT: Wiegen C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegen C.
APPLICANT: Wiegen C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegen C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegen C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegen C.
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100.0%; Score 15; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 23;
Matches 15; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , OTHER INFORMATION: Synthetic Oligonucleotide
US-09-337-619-6
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; EARLIER FILING DATE: 1996-10-30; EARLIER APPLICATION NUMBER: US 08/386,063; EARLIER FILING DATE: 1995-00-07; EARLIER PELLING DATE: 1994-07-15; NUMBER OF SEQ ID NOS: 123; SOFTWARE: PSECSEQ for Windows Version 3.0; SOFTWARE: 1994-15; LENGTH: 15
                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Artificial Sequence
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US-09-902-540-3305/c
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RESULT 15
US-09-543-681A-1544/C
US-09-543-681A-1544/C
Sequence 1544, Application US/09543681A
Facent No. 6605709
GENERAL INFORMATION:
TITLE OF INVENTION: UUCLBIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIT TITLE OF INVENTION: UNCORDICATION UNMBER: US/09/543,681A
TITLE OF INVENTION: UNMBER: US/09/543,681A
CURRENT APPLICATION NUMBER: US 60/128,706
FRIOR APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 1544
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US-09-543-681A-1598/C
US-09-543-681A-1598/C

y Sequence 1598, Application US/09543681A
y Patent No. 6605709
y GENERAL INFORMATION:
APPLICANT: GARY BRETON
y TITLE OF INVENTION: UNCLEIC ACID AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABI
TITLE OF INVENTION: UNMBER: US/09/543,681A
CURRENT APPLICATION NUMBER: US 09/543,681A
CURRENT FILING DATE: 1999-04-05
y PRIOR FILING DATE: 1999-04-09
y NUMBER OF SEQ ID NOS: 8344
y SEQ ID NO 1598
t LENGTH: 552
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                                                                                                                         Length 246;
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                                                                                                     Best Local Similarity 93.3%; Score 13.4; DB 4;
Matches 14; Conservative 0; Mismarth
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Pred. No. 3.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 13.4; DB 4;
Pred. No. 3.2e+02;
0; Mismatches 1;
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Best Local Similarity 93.3%;
Matches 14; Conservative (
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93.3%;
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                                                                         ORGANISM: Myxococcus xanthus US-09-902-540-3305
                                                                                                                                                                                                   1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                                    73 GCAGGACGTTGAGCT 59
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US-09-543-681A-1544
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 3305
LENGTH: 246
TYPE: DNA
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Matches 14; Conservative
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US-09-489-039A-90/c
; Sequence 90, Application US/09489039A
; Patent No. 6610836
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, ORGANISM: Klebsiella pneumoniae
US-09-489-039A-90
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US-09-949-016-152927
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US-09-949-016-94275

Sequence 94275, Application US/09949016

Patent No. 6812339

GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF.

FILE REFERENCE: CL001307

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT FILING DATE: 2000-04-14

PRIOR FILING DATE: 2000-10-20

PRIOR PLICATION NUMBER: 60/231,768

PRIOR PLICATION NUMBER: 60/231,498

PRIOR FILING DATE: 2000-10-03

PRIOR PLILING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTHARE: PESELSEQ for Windows Version 4.0

SEG ID NO 94275

LENGTH: 601
                                                                         FACENTIAL NO. 191539

FARENTAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

FILE REFERENCE: CLOO1307

CURRENT APPLICATION NUMBER: US/09/949,016

FRIOR FILING DATE: 2000-04-14

PRIOR FILING DATE: 2000-10-20

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTWARE: PSESSEQ for Windows Version 4.0

LENGTH: 601
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 13.4; DB 4; Length 601; Pred. No. 3.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Indels
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93.3%; Pred. No. 3...
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; Sequence 152927, Application US/09949016
; Patent No. 6812339
                                 Sequence 78509, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239 GCATGAAGTTGAGCT 225
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Best Local Similarity 93.33
Matches 14; Conservative
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Matches 14; Conservative
RESULT 17
US-09-949-016-78509/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-78509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) ORGANISM: Human
US-09-949-016-94275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
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TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CL001307
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR PAPLICATION NUMBER: 60/241,755
PRIOR PAPLICATION NUMBER: 60/237,768
PRIOR PLING DATE: 2000-10-03
PRIOR PILING DATE: 2000-10-03
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: PSECSEQ for Windows Version 4.0
IENGTH: 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Gary Breton et. al
APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: PREUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT FILING DATE: 2000-01-27
FRICH APPLICATION NUMBER: US 60/117,747
FRICH FILING DATE: 1999-01-29
NUMBER OF EXQ ID NOS: 14342
SEQ ID NO 90
LENGTH: 999
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Patent No. 6432648

Patent No. 6432648

Patent INCOMATION:
APPLICANT: Blumenfeld, Marta
APPLICANT: Chumakov, Ilya
APPLICANT: Cohen, Annick
TITLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
TITLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
TITLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
CURRENT APPLICATION UNMERS: US/09/641,638

CURRENT APPLICATION UNMERS: US/09/641,638
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RESULT 23
US-09-902-540-8773/C
; Sequence 8773, Application US/09902540
; Patent No. 6833447
; GENERAL INFORMATION:
; APPLICANT: Goldman, Barry S.
; APPLICANT: Slater, Steven C.
; APPLICANT: Wiegand, Roger C.
; APPLICANT: Wiegand, Roger C.
; TITLE OF INVENTION: Myscoccus xanthus Genome Sequences and Uses Thereof
; TITLE OF INVENTION: Myscoccus Xanthus Genome Sequences and Uses Thereof
; CURRENT APPLICATION NUMBER: US/09/902,540
; CURRENT PILING DATE: 2001-07-10
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LOCATION: 849..859
OTHER INFORMATION: downstream amplification primer, complement
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89.3%; Score 13.4; DB 4; Length 1001;
Best Local Similarity 93.3%; Pred. No. 3.5e+02;
Matches 14; Conservative 0; Mismatches 1; Indels 0
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                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_binding
LOCATION: 502. 521
OTHER INFORMATION: 12-815-94.mis2, potential complement
                                                                                                                                                                                       OTHER INFORMATION: 12-815-94 : polymorphic base A or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 93.3%; Pred. No. 3.6e+02;
Matches 14; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: primer bind
LOCATION: 408..428
OTHER INFORMATION: upstream amplification primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAMES/KEY: misc_binding
LOCATION: 489..513
OTHER INFORMATION: 12-815-94 potential probe
                                                                                                                                                                                                                                               NAME/KEY: misc_binding
LOCATION: 481._500
OTHER INFORMATION: 12-815-94.mis1, potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 8773
LENGTH: 1290
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LOCATION: S01,790..791,798,845,848

CTHEN INFORMATION: n=a, g, c or t

US-10-170-097-261
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                                                        TYPE: DNA
ORGANISM: Homo Sapiens
                                                                                                                                  NAME/KEY: allele
LOCATION: 501
SEQ ID NO 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
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; Sequence 261, Application US/10170097
; Patent NO. 6794143
; GENERAL INFORMATION:
; PALCANT: Blumenfeld, Marta
; APPLICANT: Blumenfeld, Marta
; APPLICANT: Chumakov, Ilya
; APPLICANT: Chumakov, Ilya
; APPLICANT: Chumakov, Ilya
; TITLE OF INVENTION: BIALLELIC MARKERS DERIVED FROM GENOMIC REGIONS
; TITLE OF INVENTION: BIALLELIC
; TITLE OF INVENTION UNBERR: US 09/641,638
; PRIOR PILING DATE: 2002-06-10
; PRIOR PILING DATE: 1999-08-16
; PRIOR PILING DATE: 1999-08-07
; PRIOR PILING DATE: 1999-08-07
; PRIOR PILING DATE: 1999-08-07
; PRIOR FILING DATE: 1999-03-23
; PRIOR FILING DATE: 1999-03-23
; PRIOR FILING DATE: 1999-03-21
; PRIOR FILING DATE: 1999-03-21
; PRIOR FILING DATE: 1999-03-22
; RUMBER OF SEQ ID NOS: 1304
; SOFTWARE: PALENT. pm
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LOCATION: 501

COTHER INFORMATION: 12-815-94 : polymorphic base A or G

NAME/KEY: misc_binding

LOCATION: 491._500

COTHER INFORMATION: 12-815-94.misl, potential

LOCATION: 502._521

OTHER INFORMATION: 12-815-94.mis2, potential

LOCATION: 502._521

OTHER INFORMATION: 12-815-94.mis2, potential complement

LOCATION: 408..428

OTHER INFORMATION: upstream amplification primer

NAME/KEY: primer bind

LOCATION: 849..859

OTHER INFORMATION: downstream amplification primer, complement

COCATION: 489..513

OTHER INFORMATION: 12-815-94 potential probe

NAME/KEY: misc_binding

LOCATION: 489..513

OTHER INFORMATION: 12-815-94 potential probe

NAME/KEY: misc_binding

LOCATION: 501.799,845,848

LOCATION: 501.799.791,798,845,848
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89.3%; Score 13.4; DB 3; Length 1001;
Best Local Similarity 93.3%; Pred. No. 3.5e+02;
Matches 14; Conservative 0; Mismatches 1; Indels 0;
PRIOR APPLICATION NUMBER: US 09/502,330
PRIOR FILING DATE: 2000-02-11
PRIOR APPLICATION NUMBER: US 60/133,200
PRIOR PILING DATE: 1999-05-07
PRIOR PILING DATE: 1999-03-23
PRIOR PILING DATE: 1999-03-12
PRIOR PILING DATE: 1999-03-12
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1304
SOFUTANRE: PALENT.PM
SEQ ID NO 261
LENGTH: 1001
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                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 22
US-10-170-097-261/c
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                                                                                                                                                                                                                                                                                                 2616-4511 bp of SEQ ID NO: 29
                                                                                                                 ORGANISM: Pseudomonas denitrificans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 676, Application US/09620312D
Sequence 676, Application US/09620312D
Patent No. 6569662
GENERAL INFORMATION:
APPLICANT: Tang, Y. Tom
APPLICANT: Liu, Chenghua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1455 GCAGGACGTTGAGCT 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          385 GCATGACGTTGAGGT 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GCATGACGTTGAGCT 15
LENGTH: 1896 base pairs
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Best Local Similarity 93.3'
Matches 14; Conservative
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Best Local Similarity 93.3
Matches 14; Conservative
          TYPE: Nucleic acid
STRANDEDNESS: Double
TOPOLOGY: Unknown
                                                                                                                                                                                                                                                                                               LOCATION: 2616-4511 b

IDENTIFICATION METHOD:

CTHER INFORMATION:

US-08-426-630-33
                                                                                                                            STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
HAPLOTYPE:
TISSUE TYPE:
CELL TYPE:
CELL LINE:
                                                            MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-949-016-2726/c
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US-09-949-016-2726
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                                                                                                                                                                                                                                                                                NAME/KEY:
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                           APPLICANT: BLANCHE, FRANCIS; CAMERON, BEATRICE; CROUZET,
APPLICANT: BLANCHE, FRANCIS; CAMERON, BEATRICE; CROUZET,
APPLICANT: BLANCHE, LAURENT; LEVCY SCHIL, SOPHIE;
APPLICANT: THIBAUT, DENIS
TITLE OF INVENTION: DENIS INVOLVED IN THE
TITLE OF INVENTION: EDISYNTHESIS OF COBALAMINS AND/OR COBAMIDES, DNA SEQUENCES
TITLE OF INVENTION: CODING FOR THESE POLYPEPTIDES, PREPARATION METHOD AND THEIR
TITLE OF INVENTION: USE.
NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
STREET: 555 13TH STREET, N.W.
CITY: WASHINGTON
STATE: DISTRICT OF COLUMBIA
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CLASSIFICATION: 435
PRIOR APPLICATION 1435
PRIOR APPLICATION DATE:
APPLICATION NUMBER: 07/916,151
FILING DATE: 14-SEP-1992
APPLICATION NUMBER: PCT/FR91/00054
FILING DATE: 30-JAN-1991
ATTORNEY/AGENT INFORMATION:
NAME: F. F. CALVETTI
REGISTRATION NUMBER: 1290-7213
TELEPHONE: (202) 857-7887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READBLE FORM:
MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
COMPUTER: SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/426,630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 33, Application US/08426630 Patent No. 6656709
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INFORMATION FOR SEQ ID NO: 33:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  662 GCTTGACGTTGAGCT 648
                                                                                                                                                                                                                                                                                                                                                                                                                   1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Proteus mirabilis
US-09-543-681A-1840
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US-08-426-630-33/c
                                                                                                                                                                                                                                                                  LENGTH: 1842
                                                                                                                                                                                                                                                   SEQ ID NO 1840
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APPLICANT: APPLICANT:

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Gaps
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; Patent No. 5866132
; GENERAL INFORMATION:
APPLICANT: Stephens, Len
APPLICANT: Braselmann, Sylvia
TITLE OF INVENTION: G-BETA-GAMMA REGULATED
TITLE OF INVENTION: PHOSPHATIDYLINOSITOL-3' KINASE
NUMBER OF SEQUENCES: 14
CORRESSONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds, LLP
STREET: 1155 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTRY: WA
COMPUTRY: WA
COMPUTRY: READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
SOFTWARE: FASTESC for Windows Version 2.0b
CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/916,917
FILING DATE: 15-AUG-1997
CLASSIFICATION DATA:
APPLICATION DATE: 27-UUW-1996
ATTORNEY/AGENT INFORMATION:
NAME: ADFAME, SARWELL
RESTREMCE/DOCKET NUMBER: 30,605
REFERENCE/DOCKET NUMBER: 30,605
TELECOMMUTCATION INFORMATION:
TELECOMMUTCATION INFORMATION:
TELECOMMUTCATION INFORMATION:
TELECOMMUTCATION INFORMATION:
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CURRENT APPLICATION NUMBER: US/09/620,312D
                  CURRENT FILING DATE: 2000-07-19
PRIOR APPLICATION NUMBER: 09/552,317
PRIOR APPLICATION NUMBER: 09/488,725
PRIOR PILING DATE: 2000-04-25
PRIOR FILING DATE: 2000-01-21
NUMBER OF SEQ ID NOS: 1105
SEQ ID NO 675
LENGTH: 3039
                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (1)...(3039)
OTHER INFORMATION: n = a,t,c or g
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TELEFAX: 650-493-5556
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 3808 base pairs
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Best Local Similarity 93.39
Matches 14; Conservative
                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Homo sapiens PEATURE: NAME/KEY: CDS LOCATION: (169)...(2502) PEATURE:
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STRANDEDNESS:
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APPLICANT: May Yunqing
APPLICANT: Wang Durui
APPLICANT: Wang Durui
APPLICANT: Wang, Dilwei
APPLICANT: Wang, Zhiwei
APPLICANT: John Tillinghast
APPLICANT: John Tillinghast
APPLICANT: Dramanac, Radoje T.
TITLE OF INVENTION: Polypeptides
FILE REFERENCE: 784CIP2B
CURRENT APPLICATION NUMBER: US/09/620,312D
CURRENT FILING DATE: 2000-07-19
PRIOR APPLICATION NUMBER: 09/552,317
PRIOR FILING DATE: 2000-04-25
PRIOR FILING DATE: 2000-04-25
NUMBER OF SEQ ID NOS: 1105
SOFTWARE: PLE_genes Version 1.0
SEQ ID NO 676
LENGTH: 2955
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PPLICANT: Wang, Dunrui
PPLICANT: Wang, Zhiwei
PPLICANT: Wang, Zhiwei
PPLICANT: John Tillinghast
TTLE OF INVENTION: No. 6569662el Nucleic Acids and
TTLE OF INVENTION: Polypeptides
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89.3%; Score 13.4; DB 4;
Best Local Similarity 93.3%; Pred. No. 4.1e+02;
Matches 14; Conservative 0; Mismatches 1
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| LOCATION: (1)...(2955)
| OTHER INFORMATION: n = a,t,c or g
| US-09-620-312D-676
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Chen, Kui-hong
Zhao, Qing A.
Wehrman, Tom
Xue, Aidong J.
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Chen, Rui-hong
Zhao, Qing A.
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Wang, Jian-Rui
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APPLICANT: Liu, Chenghua
APPLICANT: Asundi, Vinod
APPLICANT: Zhang, Jie
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LOCATION: (169)..(2418)
PEATURE:
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Xue, Aidong
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                                                                                                      Query Match 89.3%; Score 13.4; DB 2; Length 3808; Best Local Similarity 93.3%; Pred. No. 4.2e+02; Matches 14; Conservative 0; Mismatches 1; Indels 0;
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Patent No. 5865133
GENERAL INFORMATION: Capture Ca
                                                                                                                                                                                                                                                                                                                  592 GCATGACGATGAGCT 606
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; TOPOLOGY: linear
US-08-916-917-3
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Search completed: September 3, 2005, 09:51:59
Job time : 95.2857 secs

| AAP19645<br>AAF99583<br>AAP99566<br>AAP99630<br>AAF99630<br>AAF99641<br>AAF99941 | AAF98961 AAF9896<br>AAH78474 ABH7847<br>ABH35122 ABH35122 ABH3548<br>ABH35186 ABH3518 | ABL35205 ABL35205 ABL35205 ABL35228 ABL35228 ABL35271 ABS77582 ABS77682                    | ABS/7602 ABS/7602 ABS/7828 ABS/7828 ABL/38922 ABL/38923 ABL/38923 ABL/38923 ABL/38923 ABL/38921 ABL/38921 | 6 ABL38920 ADL38920 ADL38920 ADL38920 ADL38920 ADL38920 ADL3920 BUrine To ABS70516 Dendritic To ABS70516 Dendritic To ABS70516 Dendritic To ABS70516 Dendritic To AC091364 B-cell st AC091364 B-cell st AC093174 AC093174 AC093174 AC093174 AC093174 AC093174 AC093174 AC093174 Immunosti AC093171 AC093171 Immunosti AC03171 AC093171 AC093171 AC093171 AC093171 AC093171 AC093171 AC093171 AC093171 AC09317 | ACESTON ACCESTON ACCESTO | AD286589 AD286589 AD286882 AD20019 AD20019 AD20019 AD20019 AD20019 AD20019 AD20019 AD20019 AD20016 AD20019 AD2 | ALIGNMENTS  |
|--|---|--|---|---|--|--|-------------|
| 15 100.0 1<br>15 100.0 1<br>15 100.0 1<br>15 100.0 1<br>15 100.0 1               | 15 100.0 1<br>15 100.0 1<br>15 100.0 1<br>15 100.0 1                                  | 15 100.00 11 15 100.00 11 15 100.00 11 15 100.00 11 15 100.00 11 15 100.00 11 15 100.00 11 | 15 100.00<br>15 100.00<br>15 100.00<br>15 100.00<br>15 100.00<br>15 100.00                                | 45 15 100.0 15 46 47 48 15 100.0 15 48 48 15 100.0 15 50 15 100.0 15 100.0 15 |  | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2  |             |
|  | econds<br>tes/sec   |  |   |   | pa   | Immunosti Immunosti Immunosti Immunosti Immunosti IL-12 sec IL-12 sec IMMUNE re Immune re Immunosti Immunosti B-cell st Parasitic Parasitic Phosphoro CpG Oligo Oligonucl  | munomod     |
| 5.1.6<br>Compugen Ltd.   | 1; Search time 286.714 Se<br>(without alignments)<br>309.702 Million cell upda        |  | 559870667 residues<br>chosen parameters: 8780412<br>00  |   | results predicted by chance to have a . to the score of the result being printed of the total score distribution. SUMMARIES ID   | Aav52553 Unu Aav27727 Imu Aav27727 Imu Aav2772 Imu Aav2772 Imu Aax41860 IL- Aaz41860 IL- Aaz41897 IL- Aaz47935 Imu Aaz47628 Par  | Aad02966 Im |

AAV52553;

RESULT 1

AAV52553

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AAY27641-751 represent immunostimulatory oligodeoxyribonucleotides (ODNs) of the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: 5' NIXIGGXXN2 3', where at least one uncleotide separates consecutive CpGs, X1 is adenine, guanthe, or thymine, X2 is cytosine or thymine, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer OR 5' NIXIZCGXXXN3 3', where at least one nucleotide separates consecutive CpGs, X1 and X2 are selected from CGC or CGG tetramer or cpf, GpG, GpA, ApT and ApA, X3 and X4 are selected from TpT or CpT, N1 is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 consecutive CpGs x1 and none CCG or CGG trimer. The ODNs activate lymphocytes in a subject and redirect a subject's immune response from a Th2 to a Th1 (e.g. by inducing monocytic cells and other cells to produce Th1 cytokines, including IL-12, IFN-gamma and GM-CSF).

The ODNs can be used to treat or prevent an asthmatic disorder, adjuvant during antibody generation in a mammal such as a mouse or a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections or autoimmune disease.
                                                                                                                      Immunostimulatory, oligodeoxyribonucleotide, ODN;
unmethylated Cyp dinucleotide; activate; lymphocyte; immune response;
Th2; Th1; cytokine; treatment; prevention; asthma; autoimmune disease;
desensitisation therapy; artificial adjuvant; antibody generation; ss.
                                                                     Immunostimulatory oligodeoxyribonucleotide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 49; 109pp; English.
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                        01-OCT-1998 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Krieg AM, Kline JN;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-OCT-1996;
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Local S...
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                                                                                                                                                                                                                                                                                                                                                             07-MAY-1998.
                                                                                                                                                                                                                                                          Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence represents an unmethylated CpG dinucleotide, and can be used in the method of the invention. The method is for treating a subject having, or at risk of having an acute decrement in air flow, comprising administering a nucleic acid sequence containing at least one daministering a nucleic acid sequence containing at least one containing at least one unmethylated CpG. The nucleic acids containing an unmethylated CpG. The realistic acids subject by activating natural killer cells (NK) or redirecting monocytic and other cells to produce Thic cytokines. They can be used to treat pulmonary discders having an immunologic component, such as asthma or environmentally induced airway disease. They can also be used to treat disease associated with Grampositive bacterial infections or endotoxaemia including bacterial commingitis, neonatal sepsis, cystic fibrosis, inflammatory bowel disease and liver cirrhosis, Gram-negative pheumonia, Gram-negative abdominal abscess, haemorrhagic shock, disseminated intravascular coagulation, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                          natural killer cell activation; immune response; bacterial meningitis; putural killer cell activation; NK cell; Th2 response; neonatal sepsis; pulmonary disorder; asthma: envixonmentally induced airway disease; bacterial infection; endocoxaemia; therapy; cystic fibrosis; inflammatory bowel disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Use of nucleic acids containing an unmethylated CpG - for treating a subject having or at risk of having an acute decrement in air flow or inhibiting an inflammatory response.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   response to lipopolysaccharide
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                                                                                                                                                                                                                                                          Unmethylated CpG dinucleotide 1823.
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                                                                                                      AAV52553 standard; DNA; 15 BP
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nes 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Krieg AM;
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                                                                                                                                                                                                         20-NOV-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic.
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0
                              100.0%; Score 15; DB 2; Length 15; 100.0%; Pred. No. 1.4e+02;
                                                              0: Indels
Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                          Immunostimulatory; oligodeoxyribonucleotide; ODN;
                                                                Mismatches
                                                                                                                                                                                                 AAV27673
ID AAVX
XX
AC AAVX
XX
DT 01-C
XX
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Query Match

Matches

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AAV27727

RESULT 2

AAV27727

07-MAY-1998

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AAV27641-751 represent immunostimulatory oligodeoxyribonucleotides (ODNs) of the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: 5' NAXIGCSAN2'3', where at least one uncleotide separates consecutive CpGs, X1 is adenine, guanine, or thymine, X2 is cytosine or thymine, N is any nucleotide and N1+N2 is 0-26 thymine, X2 is cytosine or thymine, N is any nucleotide and N1+N2 is 0-26 cr GG trimer OR 5' NXIX2GG3X4N 3', where at least cor more than one CGG or GG trimer OR 5' NXIX2GG3X4N 3', where at least one nucleotide separates consecutive CpGs, X1 and X2 are selected from GpT, GpG, GpA, ApT and ApA, X3and X4 are selected from TpT or CpT, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 consent or contain a CGG tetramer or more than one CCG or CGG trimer. The CONS activate lymphocytes in a subject and redirect a subject's immune CONS activate lymphocytes in a subject and redirect a subject's immune CCC response from a Th2 to a Th1 (e.g. by inducing monocytic cells and other CCC cells to produce Th1 cytokines, including In-12, IFN-gamma and GM-CSF).

CT he ODNs can be used to treat or prevent an asthmatic discases, in desensitisation therapy, as an artificial
                                                                                                                                                                                                                                                                                                                                                   New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections or autoimmune disease.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 27; 109pp; English.
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                                                                                                97WO-US019791
                                                                                                                                                    96US-00738652
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Best Local Similarity 100.
                                                                                                                                                                                                 (IOWA ) UNIV IOWA RES
                                                                                                                                                                                                                                                     Krieg AM, Kline JN;
                                                                                                                                                                                                                                                                                                        WPI; 1998-272127/24.
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WO9818810-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANY27641-751 represent immunostimulatory oligodeoxyribonucleotides (ODNs) of the invention. The ODNs contain at least one unmethylated CpG of the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: 5' NIXXCGX2N2 3', where at least one nucleotide separates consecutive CpGs, X1 is adenine, guanine, or thymine, X2 is cytosine or thymine, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or one nucleotide separates consecutive CpGs, X1 and X2 are selected from CpT, GpG, GpA, ApT and ApA, X3and X4 are selected from TpT or CpT, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer. The Cobs activate lymphocytes in a subject and redirect a subject's immune cobs activate lymphocytes in a subject and redirect a subject's immune cobs activate lymphocytes in a subject and redirect a subject's immune cells or produce Th1 cytokines, including II-12, IFV-Samma and GM-CSF). The ODNs can be used to treat or prevent an asthmatic disorder, autoimmune diseases, in desensitisation therapy, as an artificial
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections or autoimmune disease.
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     unmethylated CpG dinucleotide; activate; lymphocyte; immune response; Th2; Th1; cytokine; treatment; prevention; asthma; autoimmune disease; desensitisation therapy; artificial adjuvant; antibody generation; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 15; DB 2; Length 15; Pred. No. 1.4e+02;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
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Matches 15; Conservative 0.
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Gaps

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97WO-US019791.

30-OCT-1997;

Synthetic

AAV27679;

RESULT 4 AAV27679

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WPI; 1999-620169/53.
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                                               system.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                              AAV27641-751 represent immunostimulatory oligodeoxyribonucleotides (ODNs) of the invention. The ODNs contain at least one unmethylated CpG dinucleotide, and have the formula: $\tilde{S}$ NIXICGXN2 3.\tilde{Y}$, where at least one nucleotide separates consecutive CpGs, X1 is adenine, guanine, or thymine, X2 is cytosine or thymine, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer OR 5' NIXIZCGX3X4N 3', where at least one nucleotide separates consecutive CpGs, X1 and X2 are selected from CpT or CpT, N is any nucleotide and N1+N2 is 0-26 bases with the provision that N1 and N2 does not contain a CCGG tetramer or more than one CCG or CGG trimer. The ODNs activate lymphocytes in a subject and redirect a subject's immune response from a Th2 to a Th1 (e.g. by inducing moncoytic cells and other cells to produce Th1 cytokines, including IL-12, IFN-gamma and GM-CSF). The ODNs can be used to treat or prevent an asthmatic disorder, autoimmune diseases, in desensitisation in a mammal such as a mouse or a
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                                                                                             New immunostimulatory nucleic acid molecules - which contain at least one unmethylated CpG dinucleotide, used for treating e.g. tumours, infections
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100.0%; Pred. No. 1.4e+02;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IL-12 secretion inducing CpG oligonucleotide 5.
                                                                                                                                           Disclosure, Page 36; 109pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ41860 standard; DNA; 15 BP
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Matches 15; Conservative
                                                                                                                   or autoimmune disease
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                                               Kline JN;
                                                                     WPI; 1998-272127/24.
 30-OCT-1996;
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                                               Krieg AM,
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Sequences AAZ41856-Z41949 are phosphorothioate CpG oligonucleotides which are used in the invention comprises stimulating an immune response in a subject comprising administering to a subject exposed to an antigen, an immunopotentiating administering to a subject exposed to an antigen, an immunopotentiating administering to a subject exposed to an antigen, an immunopotentiating cytokine and an immunostimulatory CpG oligonuclectide to immunopotentiating cancer by stimulating an antigen specific immune response. The methods are useful for treating cancer antigen. The methods can also be used to treat cancer antigen. The methods can also be used to treat carcinoma, fibroma, inhumanes, including but not limited to: sarcoma, carcinoma, fibroma, inhumanes, including but not limited to: sarcoma, carcinoma, fibroma, inhumanes, including but not limited to: sarcoma, carcinoma, fibroma, used to useful for treating infectious diseases, e.g. and glioma. The methods are also useful for treating infectious diseases. The methods may also be used to treat allergic diseases, e.g. asthma. The methods and compositions may also be applied to treat cancer and tumours of non human subjects, e.g. cats and dogs. Neoplasias affecting agricultural livestock may also be treated and include leuksemia, haemangiopericytoma and bovine ocular neoplasia. Chronic, infectious, contagious diseases of sheep and goats caused by the bacterium of sheep caused by jaagsiekte may also be treated. CpG oligonucleotides can be useful in activating B cells, and contagious lung tumour of such as monocytes and macrophages. CpG oligonucleotides can be useful in activating B cells, and contagious lung tumour in custul and compositions in the presenting cells and macrophages. CpG oligonucleotides entabods custom and bovine observed on an include sentiating contagions of the pactorium and bovine observed on an include sentiating contagions diseases.
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Novel synergistic combinations of immunostimulatory oligonucleotides and immunopotentiating cytokines are useful for stimulating the immune
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          conjunction with tumour antigens to protect against a tumour challenge
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                                                                                                                                                                                                           Example 8; Page 68; 91pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
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Best Local Similarity 100.
Matches 15; Conservative
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RESULT 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequences AAZ41856-Z41949 are phosphorothioate CpG oligonucleotides which are used in the invention comprises stimulating an immune response in a subject comprising administering to a subject exposed to an antigen, an immunopotentiating cytokine and an immunostimulatory CpG oligonucleotide to induce a synergistic antigen specific immune response. The methods are useful for treating cancer by stimulating an antigen specific immune response against a cancer antigen. The methods can also be used to treat neoplastic disorders in humans, including but not limited to: sarcoma, carcinoma, fibroma, Lymphoma, melanoma, neuroblastoma, retinoblastoma, and glioma. The methods are also useful for treating infectious diseases, and glioma be used to treat also useful for treating infectious diseases.

Carcinoma, The methods are also useful for treating infectious diseases.

Carcinoma, and slose used to treat allergic diseases, and fungal diseases.

Carcinoma and slose used to treat allergic diseases, and tumours contominant subjects, e.g. cats and dogs. Neoplasias affecting contural livestock may also be treated and include leukaemia, haemanglopericytoma and bovine ocular neoplasia. Chronic, infectious, contagious diseases of sheep and gate caused by the bacterium contagious diseases of sheep and gate caused by the bacterium contagious diseases of sheep and gate caused by the bacterium contagious diseases of sheep and gate caused by the bacterium caused by jasquiskte may also be treated. CpG oligonucleotides can be useful in activating B cells, NK cells, and antigous presenting cells, custuch as monocytes and macrophages. CpG oligonucleotides enhance antibody such as monocytes and macrophages. CpG oligonucleotides cantibody
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                              Novel synergistic combinations of immunostimulatory oligonucleotides and immunopotentiating cytokines are useful for stimulating the immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immunostimulatory; stereoisomer; CpG oligonucleotide; Th2; Th1; asthma; allergic reaction; allergen; cancer antigen; cancer; immunoinhibitory; inflammatory disease; inflammatory bowel disease; autoimmune disease; gingivitis; psoriasis; sepsis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    such as monocytes and macrophages. CpG oligonucleotides enhance antibod dependent cellular cytotoxicity and can be used as an adjuvant in conjunction with tumour antigens to protect against a tumour challenge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleotide sequence of an immunostimulatory CpG oligonucleotide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 15; DB 2; Length 15; 100.0%; Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
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                                                                                           Example 8; Page 76; 91pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GCATGACGTTGAGCT 15
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Best Local Similarity luv..
Local Similarity luv..
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    WPI; 1999-620169/53
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AAZ60933-Z61015 represent immunostimulatory stereoisomers of CpG
coligonucleotides. The sequences are derived from generic nucleic acid
sequence, from which immunoinhibitory sequences may also be derived. The
immunostimulatory nucleic acids can be co-administered with an antigen to
induce an antigen-specific immune response. The immunostimulatory nucleic
acids can also be used in methods for redirecting a subject is immune
response from a Th2 to a Th1, for treating asthma, for desensitising a
cubject against the occurrence of an allergic reaction in response to
contact with an allergen, for activating an immune cell, especially a
tymphocyre or a dendritic cell expressing a cancer antigen or for
treating cancer. The immunoinhibitory nucleic acid can be used to prevent
an immune response, especially where the immune response in the subject
an immune response, especially where the immune sesponse in the subject
is excessive due to having received an immune attimilating compound. The
immunoinhibitory nucleic acid can be used to treat a subject having or at
tisk of an inflammatory disease, especially inflammatory bowel disease,
autoimmune disease, gingivitis, psoriasis and sepsis
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                                                                Immunostimulatory and immunoinhibitory stereoisomers of CpG oligonucleotides useful for immunotherapy of cancer.
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                                                                                                                                                                                      Disclosure; Page 10; 88pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAZ47936 standard; DNA; 15 BP
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Matches 15; Conservative
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WPI; 2000-195254/17.
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02-FEB-1999;
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                                                                                                                                                                   The intercolled. The method can be used to inducting an immune response against an antigen such as cells, cell stracts, proteins, carbohydrate, viral extracts, viruses, lipids, glycolipids, carbohydrate, viral extracts, viruses, bacteria, fungi, parasaltes and allergies. It can be used in a subject at risk of developing cancer or an allergie reaction. It can also be used for treating an infectious disease, allergic diseases and asthma, as well as thrombocytopaenia which is drug-induced, due to an autoimmune disorder such as idiopathic thrombocytopenic purpura, or resulting from accidental or therapeutic radiation exposure. It can also be used for treating anaemia such as drug cinduced anaemia, immunohaemolytic disorder, genetic disorders such as haemoglobinopathy and inherited haemolytic anaemia, inadequate production despite adequate iron stores, chronic disease such as kidney failure, and chronic inflammatory disorder such as rheumatoid arthritis, or anaemia centricial and an accidental or therapeutic radiation exposure. AAZ48029 represent phosphorothicate CpG oligonucleotides used in the exemplification of the present invention
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                                      The present invention describes a method using CpG containing oligonucleotides (ONB) for regulating immune system remodeling and for regulating had method for inducing an antigen-specific immune response comprises: (1) administering an ON having a sequence including at least the formula (1); and (2) exposing the subject to an antigen at least 3 days after the ON is administered to the subject to produce an antigen-specific immune response: 5' XICGX2 3' (1), where the ON = includes at least 8 nucleotides; C and G = unmethylated, and X1 and X2 = nucleotides. The method can be used for inducing an immune response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Haematopoiesis, regulation, CpG oligonucleotide, phosphorothioate, immune remodeling; thrombopoiesis, anaemia; immune system, cancer, immune response, allergic reaction, infectious disease, asthma; thrombocytopaemia; immunchaemolytic disorder, genetic disorder; haemoglobinopathy; kidney failure, chronic inflammatory disorder;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immune remodeling inducing CpG oligonucleotide SEQ ID NO:41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
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100.0%; Pred. No. 1.4e+02;
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             Example 1; Page 65; 116pp; English
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99US-00241653.
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Matches 15; Conserv
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02-FEB-1999;
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The present invention describes a method using CpG containing
cligonucleotides (ONs) for regulating immune system remodeling and for
cegulating haematopolesis. The method for inducing an antigen-specific
immune response comprises: (1) administering an ON having a sequence
including at least the formula (1); and (2) exposing the subject to an
antigen at least 3 days after the ON is administered to the subject to an
antigen at least 3 days after the ON is administered to the subject to an
consideration of the method can be used for inducing an immune response
consideration an entigen such as cells, cell extracts, proteins,
colysaccharides, polysaccharide conjugates, lipids, glycolipids,
carbohydrate, viral extracts, viruses, bacteria, fungi, parasites and
allergic reaction. It can also be used for treating an infectious
callergic reaction. It can also be used for treating an infectious
disease, allergic diseases and asthma, as well as thrombocytopaenia which
is drugi-induced, due to an autoimmune disorder, spenetic disorders such as sidopathic
chrombocytopenic purpura, or resulting from accidental or therapeutic
chrombocytopenic intpurpura, or resulting from accidental or therapeutic
chrombocytopenic, immunohaemolytic disorder, genetic disorders such as
chadiation exposure. It can also be used for treating anaemia such as despite adequate iron stores, chronic disease such as kidney failure, and
chronic inflammatory disorder such as rheumatorid arthritis, or anaemia
chromic inflammatory disorder such as rheumatorides used in the
chronic chromic despite accidental or therapeutic radiation exposure. Addition of the present invention
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                                                            Use of CpG containing oligonucleotides for, e.g. inducing an antigen-
specific immune response.
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                                                                                                                                                                                              English
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                                                                                                                                                                                                  Example 1; Page 65; 116pp;
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WPI; 2000-062261/05.
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Matches 15; Conserv
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W09956755-A1.
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                                                                                    The present invention describes a method using CpG containing cliganucleotides (ONS) as adjuvants for inducing an immune response. The method for inducing a mucosal immune response (MIR) comprises: (1) addinistering to a mucosal immune response (MIR) comprises: (1) addinistering to a mucosal surface of a subject an ON, having a sequence including at least the formula (1); and (2) exposing the subject to an artigen to induce the MIR, where the antigen is not encoded in a nucleic acid vector: S/XIX2CGX3X43' (1), where C and G = unmethylated, and X1, C X2, X3 and X4 = nucleotides. The method can be used for treating a subject at risk of developing an allergic reaction, cancer or infectious crantering sthmatic subject at risk of developing an allergic reaction, cancer or infectious crantering asthmatic subject second from infectious organisms such as infectious bacteria, viruses, caring swine, feline, swine, aduatic or avian species. The ONS act as potent mucosal adjuvants to induce immune responses at both local and remote sites against an antigen administered to the mucosal tissue. Both AMA47881 represent examples of immunostimulatory
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory oligonucleotides which enhance B cell activation useful for treating an immune system deficiency e.g. cancer.
                                 Use of CG containing oligonucleotides as adjuvants for inducing an immune
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                                                                                                                                                                                                                                                                                                                  oligonucleotides given in the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B-cell stimulating oligonucleotide, ODN1d.
                                                                    Disclosure; Page 24; 116pp; English
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Matches 15; Conservative C
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            WPI; 2000-062585/05
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                                                                                                                                                                                                                                                                                                                                                              Query Match
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This sequence represents a B cell stimulatory oligonuclectide. The invention relates to compositions comprising an oligonuclectide (I) with unmethylated guanine and cytosine nuclectides and an antigen in a carrier. The oligonuclectides can be administered to a subject in a composition with an antigen in a carrier to enhance an immune response by composition with an antigen in a carrier to enhance an immune response by and can be used to treat, prevent or ameliorate an immune system conficiency e.g. cancer or a viral, fungal, bacterial or parasitic deficiency e.g. cancer or a viral, fungal, bacterial or parasitic conficiency e.g. cancer or a viral, fungal, bacterial or parasitic conficiency e.g. cancer or a viral, fungal, bacterial or parasitic conficiency e.g. cancer or a viral, fungal, bacterial or parasitic conficiency e.g. cancer or a viral, fungal, bacterial or parasitic conficiency e.g. cancer or a viral, fungal, bacterial or parasitic consed to treat humans or vertebrate animals including dogs, cats, sheep pigs, cows, goats, chickens, mice and monkeys. Preceding chemotherapy of with the immunostimulatory oligonuclectides should be useful for increasing the responsiveness of milignant cells to subsequent chemotherapy. The 840 nucleotide size of the oligonuclectides
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CpG oligonucleotide; antigen presenting cell; natural killer cell;
granulocyte; malaria; helminth disease; tick; mite; ss.
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(OTTA-) OTTAWA CIVIC LOEB RE
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Best Local Similarity 100.
Matches 15; Conservative
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The present invention describes a method for treating and preventing parasitic infection by administration of unmethylated CpG coligonucleotides. The CpG oligonucleotides are able to stimulate the innate immune system via the activation of immune cells, such as antigen presenting cells, natural killer cells and granulocytes. The CpG coligonucleotides and the method can be used to treat and prevent parasitic diseases, such as malaria, helminth diseases, tick and mites in humans, animals and poultry. The oligonucleotides may be administered in conjunction with parasiticides or other therapeutic compounds after an conjunction with parasiticides or other therapeutic compounds after an conjunction with parasiticides or other therapeutic compounds after an can be treated or prevented include those caused by Plasmodium falciparum, P. ovale, P. malariae, P. vivax, P. knowlesi, Babbesia mirrorism anansoni, Toxoplasma gondii, Trichinella spiralis, Leishmania major, L. donovani, L. braziliensis, and L. tropica. The parasite is
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conjunction with parasiticides or other therapeutic compounds after an organism has been diagnosed to be infected with parasites. Diseases which can be treated or prevented include those caused by Plasmodium falciparum, P. ovale, P. malariae, P. vivax, P. knowlesi, Babesia microti, B. divergens, Trypanosoma cruzi, T. gambiense, T. rhodesiense, Schierosoma mansoni, Toxoplasma gondii, Trichinella spiralis, Leishmania major, L. donovani, L. braziliensis, and L. tropica. The parasite is especially capable of causing malaria. The present sequence represents a parasitic infection preventing exemplary oligonucleotide sequence from
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                                                                                                                                                                                                                                                                               100.0%; Score 15; DB 3; Length 15; 100.0%; Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                                                                      0; Indels
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                                                                                                                                                                                                                                                                                                                        0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (IOWA ) UNIV IOWA RES FOUND.
(OTTA-) OTTAWA CIVIC LOEB RES INST.
(USNA ) US SEC OF NAVY.
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Matches 15; Conservative
                                                                                                                                                                                            the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-062123/05.
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The present invention describes methods for inducing interleukin 6 (IL-6), interferon-gamma (IRN-gamma) or IL-12, or for stimulating natural killer cell lytic activity. The methods comprise administering to the subject to activity inducing IL-6 in a subject comprising and ansign of the subject to induce IL-6 in the subject comprising administering to the subject to induce IL-6 in the subject comprising activity comprising exposing a natural killer cell to the immunostimulatory nucleic acid; (2) stimulating natural killer cell lytic activity comprising exposing a natural killer cell lytic activity; (3) inducing interferon-gamma in a subject to treat an immune system deficiency comprising administering to the subject to induce cativity; (3) inducing interferon-gamma in a subject comprising administering to the subject the inducing IL-12 in a subject comprising administering to the subject the immunostimulatory nucleic acid. The methods are useful for inducing IL-6, interferon-gamma or IL-12, or stimulating natural killer cell lytic constitution in a subject, particularly a human. The methods are particularly activity in a subject, particularly a human. The methods are particularly cuseful for modulating an immune response. AAH50571 to AAH50671 represent
                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Immunostimulatory, inducing; natural killer cell; lytic activity; unmethylated CpG dinucleotide; immune response; B cell proliferation; Thl; immune activation; interleukin 6; IL-6; interferon gamma; IFN-gamma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Methods for inducing II-6, interferon-gamma or II-12, or stimulating natural killer cell lytic activity in a human, comprise administering to the subject or exposing a natural killer cell to immunostimulatory
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especially capable of causing malaria. The present sequence represents parasitic infection preventing exemplary oligonucleotide sequence from the present invention
                                                                                                                                                                     Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Murine IL-6 secretion inducing oligonucleotide SEQ ID NO:6.
                                                                                                                               Length 15;
                                                                                                                                                                     Indels
                                                                                       Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
                                                                                                                         100.0%; Score 15; DB 3; I
100.0%; Pred. No. 1.4e+02;
iive 0; Mismatches 0;
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(USSH ) US DEPT HEALTH & HUMAN SERVICES.
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                                                                                                                                                                                                              1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                                                  GCATGACGTTGAGCT 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-2001 (first entry)
                                                                                                                                                  Local Similarity 100.
nes 15; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-380456/40.
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Pred. No. 1.4e+02;

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Best Local Similarity
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                          Matches
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                                                                                                                                                                                                                AAH19266
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in a subject on administration prior to or in conjunction with a chemotherapy, so that the subject's leukaemia cells are more sensitive to chemotherapy. The compositions are useful for inducing an antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Compositions comprising immunostimulatory molecules which comprise unmethylated CpG dinucleotides useful for ameliorating immune system deficiency, treating leukemia and desensitizing subject against allergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunostimulant; antiallergic; cytostatic; antiasthmatic; vaccine; gene therapy; CpG; immune system deficiency; tumour; cancer; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 compositions can be also
                                                                                                                                                                      Gaps
    oligonucleotide sequences used in the exemplification of the present
                                                                                                                                                                    ö
                                                                                                                        Length 15;
                                                                                                                                                                    Indels
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                                                                                                                      100.0%; Score 15; .DB 4; I
100.0%; Pred. No. 1.4e+02;
iive 0; Mismatches 0;
                                                                          Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Steinberg AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 specific immune response in the subject.
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(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phosphorothioate CpG oligonucleotide #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Col 7; 55pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Krieg AM, Kline J, Klinman D,
                                                                                                                                                                                                                                                                                                                                                                                  AAH19256 standard; DNA; 15 BP.
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95US-00386063.
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(COLE-) COLEY PHARM GROUP IN
                                                                                                                                                                                                                  1 GCATGACGTTGAGCT 15
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                                                                                                                                                                      15; Conservative
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                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Leukaemia; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US6207646-B1
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07-FEB-1995;
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                                    invention
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Matches
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AAH19256
TO AAH19256
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DB 4; Length 15;

100.0%; Score 15;

Query Match

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The present invention relates to a composition comprising an isolated immunostimulatory nucleic acid which comprises unmethylated cytosine-guanine (CpG) dinucleotides and an antigen in a carrier. The present sequence is an oligonucleotide, which was used in the present invention. The immunostimulatory nucleic acids are useful for ameliorating an immune system deficiency (the presence of tumour, cancer or infectious agent) in a subject. The immunostimulatory nucleic acids are also useful for response to contact with a particular allergen. The immunostimulatory nucleic acids are also useful for vaccination and for treating leukaemia in a subject on administration prior to or in conjunction with a chemotherapy, so that the subject is leukaemia cells are more sensitive to chemotherapy, The compositions are useful for inducing an antigen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Immunostimulant, antiallergic; cytostatic; antiasthmatic; vaccine; gene therapy, CpG; immune system deficiency; tumour; cancer; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               specific immune response in the subject. The compositions can be also used to treat or prevent the symptoms of asthma
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                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 CpG Oligonucleotide #4 used to stimulate mouse B cells.
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                                             Mismatches
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(USSH ) US DEPT HEALTH & HUMAN SERVICES.
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100.08; Pr
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                                                                                                                                                                                                                                                                                BP.
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95US-00386063.
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                                                                                                                                                                                                                                                                                AAH19266 standard; DNA; 15
                                                                                                                                                                                                                                                                                                                                                                                      13-JUL-2001 (first entry)
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nes 15; Conservative
                                                                                                                                1 GCATGACGTTGAGCT
                                                Conservative
                                                                                             1 GCATGACGTTGAGCT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-280761/29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               leukaemia; ss
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07-FEB-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Synthetic.
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Synthetic.

AAH19298;

AAH19296

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The present invention describes an improvement to a method requiring the administration of interferon alpha (IFNalpha), involving administering an immunostimulatory nucleic acid (ISNA). The sequences of a number of such nucleic acids are also provided. These may comprise oligonuclectides with phosphorothioate backbones, palindrowes, or G-rich sequences. The agequences of the invention are useful in the treatment of proliferative diseases, such as cancers, and viral infections. The present sequence is an example of an immunostimulatory oligonucleotide
                                                                                                                                 Immunostimulatory nucleic acid; ISNA; human; interferon alpha; IFN-alpha;
viral infection; phosphorothioate backbone; palindrome; cancer; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oligodeoxyribonucleotide; ODN; cytosine-guanine dinucleotide; CpG; immunostimulatory; therapy; immune system deficiency; tumour; cancer; antibacterial; antiparasitic; fungicide; antiviral; cytostatic; leukaemis; systemic lupus erythematosus; sepsis; autoimmune disease; immunoinhibitory; immunoglobulin M; IgM; mutant; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Improving the efficacy of treatments involving the administration of interferon-alpha by co-administering an isolated immunostimulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 15; DB 4; Length 15; 100.0%; Pred. No. 1.4e+02; ive 0; Mismatches 0; Indels
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                                                                                       CpG immunostimulatory nucleic acid SEQ ID NO: 63.
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                                                                                                                                                                                                                                                                                                                                                                                                                                   PHARM GROUP INC
                                                                                                                                                                                                                                                                                                                                         27-SEP-2000; 2000WO-US026527.
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                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hartmann G, Bratzler RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-MAY-2001 (first entry)
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Best Local Similarity 100.
Matches 15; Conservative
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                                                                                                                                                                                                                                                  WO200122990-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic acid.
                                            11-JUN-2001
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                                                                                                                                                                                                     Synthetic.
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AAF98790;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to a composition comprising an isolated immunostimulatory nucleic acid which comprises unmethylated cytosine-guanine (CpG) dinucleotides and an antigen in a carrier. The present sequence is an oligonucleotide, which was used in the present invention. The immunostimulatory nucleic acids are useful for ameliorating an immune system deficiency (the presence of tumour, cancer or infectious agent) in a subject. The immunostimulatory nucleic acids are also useful for desensitising a subject against the occurrence of an altergic reaction in response to contact with a particular allergen. The immunostimulatory nucleic acids are also useful for vaccination and for treating leukaemia in a subject on administration prior to or in conjunction with a chemotherapy, so that the subject is leukaemia cells are more sensitive to chemotherapy. The compositions are useful for inducing an antigen specific immune response in the subject. The compositions can be also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Compositions comprising immunostimulatory molecules which comprise unmethylated CpG dinucleotides useful for ameliorating immune system deficiency, treating leukemia and desensitizing subject against allergic
                                                                                                                                                                                                                                                  Immunostimulant; antiallergic; cytostatic; antiasthmatic; vaccine; gene therapy; CpG; immune system deficiency; tumour; cancer; infection; leukaemia; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                used to treat or prevent the symptoms of asthma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Steinberg AD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Col 21; 55pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klinman D,
                                                                                         AAH19298 standard; DNA; 15 BP.
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95US-00386063.
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                                                                                                                                                                                                                             Oligonucleotide CpG S-ODN
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nes 15; Conservative
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response

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Gaps

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mutation

BP

AAF98790 standard; DNA; 15

RESULT 19 AAF98790 ID AAF9 XX

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Query Match

Best Loc Matches

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Location/Qualifiers
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27-SEP-1999; 99US-0156135P.
23-AUG-2000; 2000US-0227436P.
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/*tag=
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              Key
modified_base
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                                                                                                                                                                                                                                             Bachy M,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to immunomodulatory oligodeoxyribonucleotides (ODNs) containing methylated or unmethylated cytosine-guanine (CpG) dinucleotides. Immunostimulatory ODN compositions lymphocytes and for treating, preventing or ameliorating an immune system deficiency e.g. tumour or cancer or viral, fungal, bacterial or parasitic infection and leukaemia. Neural ODN that contains a methylated CpG dinucleotide are useful for treating diseases such as systemic lupus erythematosus, sepsis and autoimmune diseases. Immunoinhibitory ODN containing CpG dinucleotides that are not in the stimulatory motif and decition and expense of the containing CpG dinucleotides that are not in the stimulatory motif and decition and expense of the containing that an increase it or near both termini have antiviral
                                                                                                                                                                                                                                                                                                                                                                                                    Immunostimulatory composition useful for stimulating immune response in a subject, comprises antigen and immunostimulatory nucleic acid comprising oligonucleotides having unmethylated cytosine-guanine dinucleotides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    activity. The present sequence is an immunomodulatory oligodeoxyribonucleotide (ODN) 1d mutant. This is used to determine whether CpG or non-CpG ODNs causes B cell activation and immunoglobulin
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phosphorothioate; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleotide sequence of a positive control oligonucleotide.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Col 25-26; 20pp; English
                                                                                                                                                                                                                                                                                                                                           Steinberg AD;
                                            /*tag= c
replace(12, G)
/*tag= d
replace(13, C)
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replace(11, A)
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100.0%;
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(COLE-) COLEY PHARM GROUP.
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Best Local Similarity 100.
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                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-217934/22
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                                                                                                                                                                                                                                  07-FEB-1995;
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The present sequence represents a positive control oligonucleotide, which is used to test proliferation of B lymphocytes. The specification describes an immunostimulatory oligonucleotide. This oligonucleotide stimulates proliferation of B lymphocytes. The immunostimulatory oligonucleotide is used in pharmaceuticals for the preparation of human medicines, or as a vaccine adjuvant or compositions, for therapeutic or prophylactic use, and containing one or more antigens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New immunostimulatory oligonucleotide, useful as a vaccine adjuvant, stimulates proliferation of B lymphocytes.
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/*tag= a
/note= "contains phosphorothioate bonds"
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Claim 101; Page 53; 338pp; English.
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                                                                                                                                                           The present invention relates to a method for stimulating an immune response. The method comprises administering an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immune response. The present sequence is one such immunostimulatory nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich (py-rich) or thymidine (T) rich. The method is used to vaccinate subjects against tumour antigens, viral antigens (e.g. herpesviridae, retroviridae, and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, staphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allergy or immune deficiency. The present sequence can also be used to redirect a Th2 to a Th1 immune response and to activate immune cells. Note: the present sequence may have a phosphorothioate backbone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vaccine, cytostatic, virucidal, bactericidal, fungicidal, anti-parasitic, immunostimulatory, tumour, viral infection, bacterial infection, fungal infection, parasitic infection, cancer, asthma,
                                                                                Vaccinating against tumors, infectious diseases, allergies and asthma using immunostimulatory Py-rich and TG nucleic acids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vaccinating against tumors, infectious diseases, allergies and asthma using immunostimulatory Py-rich and TG nucleic acids.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              infectious disease; allergy; immune deficiency; phosphorothioate;
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                                                                                                                                 Claim 101; Page 53; 338pp; English
                  Vollmer J;
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27-SEP-1999; 99US-0156135P.
23-AUG-2000; 2000US-0227436P.
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(COLE-) COLEY PHARM GMBH.
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                  Schetter C,
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                                                 WPI; 2001-273485/28
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                  Krieg AM,
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The present invention issues of a minimistering an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immunostimulatory. The present sequence is one such immunostimulatory nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich (py-rich) or thymidine (T) rich. The method is used to vaccinate subjects against tumour antigens, viral antigens (e.g. herpesviridae, retroviridae and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, haemophilus, campylobacter, clostridium, Escherichia coli and/or staphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allergy or immune deficiency. The present sequence can also be used to redirect a Thi immune response and to activate immune cells. Note: the present sequence may have a phosphorothioate backbone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vaccinating against tumors, infectious diseases, allergies and asthma using immunostimulatory Py-rich and TG nucleic acids.
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The present invention relates to a method for stimulating an immune
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ID AAF99630 standard; DNA; 15 BP
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27-SEP-1999; 99US-0156135P.
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Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (COLE-) COLEY PHARM GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Krieg AM, Schetter C,
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1 GCATGACGTTGAGCT 15
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                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
                                                                                                                                                                                                                      AAF98961;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                     Matches
                                                                                                                                                               RESULT 26
                                                                                                                                                                              AAF98961
ID AAF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to a method for stimulating an immune response. The method comprises administering an immunostimulatory nucleic acid to a non-rodent subject in sufficient quantity to stimulate an immuno response. The present sequence is one such immunostimulatory nucleic acid. The immunostimulatory nucleic acids can be pyrimidine rich (py-rich) or thymidine (T) rich. The method is used to vaccinate subjects against tumour antigens, viral antigens (e.g. herpesviridae, retroviridae and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, reaphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allergy or immune deficiency. The present sequence can also be used to redirect a rich to a thi immune response and to activate immune cells. Note: the present sequence may have a phosphorothioate backbone
                                                                                                                                                                             ö
against tumour antigens, viral antigens (e.g. herpesviridae, retroviridae and/or orthomyxoviridae), bacterial antigens (e.g. toxoplasma, haemophilus, campylobacter, clostridium, Escherichia coli and/or staphylococcus), fungal antigens and/or parasitic antigens. The method is also useful for preventing cancer, asthma, infectious disease, allergy or immune deficiency. The present sequence can also be used to redirect a Th2 to a Th1 immune response and to activate immune cells. Note: the present sequence may have a phosphorothioate backbone
                                                                                                                                                                                                                                                                                                                                                                                                                Vaccine, cytostatic, virucidal, bactericidal, fungicidal, anti-parasitic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vaccinating against tumors, infectious diseases, allergies and asthma using immunostimulatory Py-rich and TG nucleic acids.
                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                       88.
                                                                                                                                                                                                                                                                                                                                                                                                                        immunostimulatory; tumour; viral infection; bacterial infection;
fungal infection; parasitic infection; cancer; asthma;
infectious disease; allergy; immune deficiency; phosphorothioate;
                                                                                                                                                                                ;
0
                                                                                                                                                    Score 15; DB 4; Length 15; Pred. No. 1.4e+02;
                                                                                                                                                                                0; Indels
                                                                                                                         Sequence 15 BP; 4 A; 5 C; 3 G; 3 T; 0 U; 0 Other;
                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 39; 338pp; English
                                                                                                                                                                                                                                                                                                                                                                                       Immunostimulatory nucleic acid #57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vollmer
                                                                                                                                                    Query Match
Best Local Similarity 100.0%;
Matches 15; Conservative 0;
                                                                                                                                                                                                                                                                                                       BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-SEP-1999; 99US-0156113P.
27-SEP-1999; 99US-0156135P.
23-AUG-2000; 2000US-0227436P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-SEP-2000; 2000WO-US026383
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(COLE-) COLEY PHARM GMBH.
                                                                                                                                                                                                          1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                           AAF98941 standard; DNA; 15
                                                                                                                                                                                                                                                                                                                                                            (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-273485/28
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                   AAF98941;
                                                                                                                                                                                                                                                                               RESULT 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       anti-parasitic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vaccinating against tumors, infectious diseases, allergies and asthma
using immunostimulatory Py-rich and TG nucleic acids.
                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vaccine, cytostatic, virucidal; bactericidal, fungicidal, anti-par
immunostimulatory, tumour; viral infection; bacterial infection;
fungal infection; parasitic infection; cancer; asthma;
infectious disease; allergy; immune deficiency; phosphorothioate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                             Length 15;
                                                                                                                   IndelB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  present sequence may have a phosphorothioate backbone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
Seguence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
                                                                                      red. No. 1.4e+02;
Mismatches 0;
                                                         Score 15; DB 4;
Pred. No. 1.4e+02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 40; 338pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunostimulatory nucleic acid #77.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vollmer J;
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                                                                                                                                                                                                                                                                                                                                                                                                        AAF98961 standard; DNA; 15 BP
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27-SEP-1999; 99US-0156135P.
23-AUG-2000; 2000US-0227436P.
                                                         100.001
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                                                                                                100.08;
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                                                                                                                                                                                       1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JUN-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15; Conservative
                                                                                                                                                                                                                              1 GCATGACGTTGAGCT
                                                                                                                          15, Conservative
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                                                             Query Match
Best Local Similarity
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Example 11; Page
                                                                                                                              WO200193902-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                     the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-APR-2002
                                                                                                                                                13-DEC-2001
                                             Synthetic
                                                                                                                                                                                                                     Mond JJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Н
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                                                                       misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 29
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ID ABL3
 %XCCCCCCCCCCX%X44444X8X1X4X4X4X1444444444444
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                                                                                                                                                                                                                                                                                                                                                                                                The present sequence represents a positive control oligonucleotide, which is used to test proliferation of B lymphocytes. The specification describes an immunostimulatory oligonucleotide. This oligonucleotide stimulates proliferation of B lymphocytes. The immunostimulatory oligonucleotide is used in pharmaceuticals for the preparation of human medicines, or as a vaccine adjuvant or compositions, for therapeutic or prophylactic use, and containing one or more antigens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA/RNA hybrid; phosphorothioate backbone; immunostimulatory; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                   New immunostimulatory oligonucleotide, useful as a vaccine adjuvant
stimulates proliferation of B lymphocytes.
                                                                                                                              Immunostimulatory oligonucleotide; B lymphocyte; vaccine; adjuvant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 15; DB 4; Length 15; 100.0%; Pred. No. 1.4e+02;
                                                                                                             Nucleotide sequence of a positive control oligonucleotide.

    1. .15
/*tag= a
/note= "contains phosphorothioate bonds"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 15 BP; 3 A; 3 C; 5 G; 4 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immunostimulatory oligonucleotide SEQ ID NO: 29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                 Ж,
                                                                                                                                                                                                                                                                                                                                                                               Example 1; Page 7; 14pp; French.
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0
                                                      BP
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                                                                                                                                                                                                                                                                             18-FEB-2000; 2000FR-00002057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GCATGACGTTGAGCT 15
                                                                                                                                                                                                                                                                                              (AVET ) AVENTIS PASTEUR SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABL35122 standard; DNA; 15
                                                      AAH78474 Standard; DNA; 15
                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
GCATGACGTTGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15; Conservative
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                                                                                                                                                                                                                                                                                                                                   WPI; 2001-591763/67.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                       phosphorothioate;
                                                                                                                                                                           Key
modified_base
                                                                                                                                                                                                                       FR2805265-A1
                                                                                          10-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-APR-2002
                                                                                                                                                                                                                                         24-AUG-2001
                                                                                                                                                          Synthetic
                                                                        AAH78474;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                 Bachy
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Matches
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ID ABL3
XX
AC ABL:
XX
XX
DT 04-1
XX
XX
XX
KW DNA,
                                              AAH78474
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The present invention relates to an immunostimulatory composition, which comprises at least one oligonucleotide comprising both an RNA region and a DNA region. The composition is useful for enhancing an immune response or inducing cytckines; It can be used as a vaccine adjuvant and in treating diseases, including pathogenic infection, (non-)malignant tumours (e.g. cancers of the brain, lung, ovary, breast, prostate or colon, or carcinomas of the brain, lung, ovary, breast, prostate or colon, or carcinomas arcomas), autoimmune diseases or allergies (e.g. allergic rhinitis, hay fever or food allergies), Lyme disease, hepatitis, HIV or malaria. The composition is also useful for treating, preventing or ameliorating the symptoms resulting from exposure to a biowarfare agent, e.g. Bbola, Anthrax or Listeria. The present sequence is an immunostimulatory oligonucleotide described in the exemplification of
                                                                                                                                                                                                                                                                                                                                                            form RNA or DNA/RNA hybrids. Thymidine is linked to at least one other base through a ribose sugar"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New immunostimulatory compositions comprising RNA/DNA hybrid oligonucleotides, useful for enhancing an immune response or inducing cytokines, particularly for treating diseases, e.g. cancer, allergy or HIV infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA/RNA hybrid; phosphorothioate backbone; immunostimulatory; vaccine; infection; allergy; cancer; hypersensitivity; bio-warfare; immunostimulant; antiallergic; cytostatic; antimicrobial; anti-HIV;
infection; allergy; cancer; hypersensitivity; bio-warfare;
immunostinulant; antiallergic; cytostatic; antimicrobial; anti-HIV;
immunosuppressive; protozoacie; virucide; hepatotropic; gene therapy;
antiinflammatory; antibacterial; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps

    .15
    /*tag= a
    /note= "optionally thymidine is replaced by uracil

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                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50; 68pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Klinman DM;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BIOS-) BIOSYNEXUS INC.
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Best Local Similarity
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13-DEC-2001
                 Synthetic
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                                                    misc_RNA
                                          Key
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                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to an immunostimulatory composition, which comprises at least one oligonucleotide comprising both an RNA region and a DNA region. The composition is useful for enhancing an immune response or inducing cytokines. It can be useful for enhancing an immune response trumcurs (e.g. cancers of the brain, lung, ovary, breast, prostate or colon, or carcinomas and sarcomas), autoimmune diseases or allergies (e.g. allergic rhinitis, hay fever or food allergies), Lyme disease, hepatitis, HIV or malaria. The composition is also useful for treating, preventing or ameliorating the symptoms resulting from exposure to a biowarfare agent, e.g. Ebola, Anthrax or Listeria. The present sequence is an immunostimulatory oligonucleotide described in the exemplification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA/RNA hybrid; phosphorothioate backbone; immunostimulatory; vaccine; infection; allergy; cancer; hypersensitivity; blo-warfaze; immunostimulant; antiallergic; cytostacic; antimicrobial; anti-HIV; immunosuppressive; protozoacide; virucide; hepatotropic; gene therapy;
                                                                                                                                                                                                                                                                                                                            New immunostimulatory compositions comprising RNA/DNA hybrid oligonucleotides, useful for enhancing an immune response or inducing cytokines, particularly for treating diseases, e.g. cancer, allergy or HIV infection.
                                                                               1. .15
/*tag= a
/note= "optionally thymidine is replaced by uracil to
form RNA or DNA/RNA hybrids. Thymidine is linked to at
least one other base through a ribose sugar"
immunosuppressive; protozoacide; virucide; hepatotropic; gene therapy; antinflammatory; antibacterial; ss.
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                                                                    Location/Qualifiers
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                                                                                                                                                                                                                                                                                     Klinman DM,
                                                                                                                                                                                                            07-JUN-2001; 2001WO-US018276.
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                                                                                                                                                                                                                                                              (BIOS-) BIOSYNEXUS INC.
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                                           Synthetic
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misc_RNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New immunostimulatory compositions comprising RNA/DNA hybrid oligonucleotides, useful for enhancing an immune response or inducing cytokines, particularly for treating diseases, e.g. cancer, allergy or HIV infection.
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/notage= "optionally thymidine is replaced by uracil to
/note_RNA or DNA/RNA hybrids. Thymidine is linked to at
least one other base through a ribose sugar"
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Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mond JJ, Flora M, Klinman DM,
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PAT 16-JUN-2001

DEFINITION ACCESSION VERSION KEYWORDS

RESULT 1 AR096691

ORGANISM

SOURCE

REFERENCE AUTHORS source

ORIGIN

TITLE JOURNAL FEATURES

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1 (bases 1 to 15)
Krieg, A.M., Kline, J., Klinman, D. and Steinberg, A.D. Immunostimulatory nucleic acid molecules
Patent: US 6207646-A 16 27-MAR-2001;
Location/Qualifiers
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Krieg, A.M., Kline, J., Klinman, D. and Steinberg, A.D.
Immunostimulatory nucleic acid molecules
Patent: US 6207646-A 48 27-MAR-2001;
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Unclassified.
1 (bases 1 to 15)
Krieg, A.M., Kline, J., Klinman, D. and Steinberg, A.D.
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                                                                              linear
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Unclassified.
1 (bases I to 15)
I (bases I to 15)
Immunomodulatory oligonucleotides
Immunomodulatory oligonucleotides
IL Patent: US 6194388-A 6 27-FEB-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
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                                                                                                                                                                                                               Krieg, A.M.
Immunomodulatory oligonucleotides
Patent: US 6008200-A 6 28-DEC-1999;
Location/Qualifiers
                                                                                                                                                                                                                                                                                               /organism="unknown"
/mol_type="unassigned DNA"
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/mol_type="unassigned DNA"
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Sequence 6 from patent US 6207646.
AR140447
AR140447.1 GI:14482943
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Sequence 6 from patent US 6194388.
AR135035
AR135035.1 GI:14123940
    ALIGNMENTS
                                                                         Sequence 6 from patent US 6008200.
                                                                                                                          AR096691.1 GI:10025709
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Unclassified.
1 (bases 1 to 15)
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Best Local Similarity 100.
Matches 15; Conservative
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DEFINITION

RESULT 2 AR135035

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ORGANISM

REFERENCE AUTHORS

KEYWORDS SOURCE

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Gaps

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PAT 16-JUN-2001

source

ORIGIN

TITLE JOURNAL FEATURES

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Gaps

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ACCESSION VERSION KEYWORDS SOURCE ORGANISM

REFERENCE AUTHORS

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RESULT 3 AR140447

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DEFINITION ACCESSION VERSION KEYWORDS SOURCE

AR146293

ORGANISM

AUTHORS TITLE

REFERENCE

JOURNAL

FEATURES

ORIGIN

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BD205515
Method of controlling hematopoiesis by using CpG oligonucleotide.
BD205515
BD205515.
JP 2002514397-A/5.
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Method of controlling hematopoiesis by using CpG oligonucleotide.
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No Artificial Sequence
No UP 2002514397-A/5
ND 21-MAY-2002
ND 21-MAY-1999 US 09/241653 PI
NAY-1999 US 60/08516,02-FEB-1999 US 09/241653 PI
HERMANN WAGNER, GRAXSON LIPPORD
PC C12N15/09,A61R31/70,A61K39/39,C07H21/04/A61K45/00,C12N15/00
CC Synthetic Sequence
FH Key Location/Qualifiers
FT Source 1.15
/organism='Artificial Commun.'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              other sequences; artificial sequences.

1 (bases 1 to 15)
Wagner, H. and Lipford, G.
Method of controlling hematopoiesis by using CpG oligonucleotide
Patent: JP 2002541397-A 5 21-MAY-2002;
CORY PHARMACEUTICALS GMBH, CORY PHARMACEUTICALS GROUP INC
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1 (bases 1 to 15)
Wagner, H. and Lipford, G.
Method of controlling hematopoiesis by using CpG oligonucleotide
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Location/Qualifiers
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100.0%; Score 15; DB 6; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0;
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/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                  molecules
Krieg, A.M. and Kline, J.N.
Immunostimulatory nucleic acid mole
Patent: US 6239116-A 6 29-MAY-2001,
Location/Qualifiers
                                                                        1. .15
/organism="unknown"
/mol_type="unassigned DNA"
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BD205551.1 GI:33015321
JP 2002514397-A/41.
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BD205551
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BD205515
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                                                                                                                                                                      Unknown...
Unknown.i.ed.
Unclassified.
1 (bases 1 to 15)
Krieg,A.M. and Weiner,G.
Krieg,A.M. and Weiner,G.
Methods and products for stimulating the immune system using immunotherapeutic oligonucleotides and cytokines
Patent: US 6218371-A 5 17-APR-2001;
Location/Qualifiers
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Unknown.
Unclassified.
1 (bases 1 to 15)
Krieg,A.M. and Weiner,G.
Krieg,A.M. and Weiner,G.
Methods and products for stimulating the immune system using immunotherapeutic oligonucleotides and cytokines
Patent: US 6218371-A 41 17-APR-2001;
Location/Qualifiers
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ilarity 100.0%; Pred. No. 9.4e+02;
Conservative 0; Mismatches 0;
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AR146329
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Sequence 5 from patent US 6218371.
AR146293.1 GI:15109482
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1 (bases 1 to 15)
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Matches 15; Conservative
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Best Local Similarity
Matches 15; Conserv
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LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE

RESULT 7 AR146329

ORGANISM

AUTHORS TITLE

REFERENCE

JOURNAL

FEATURES

ORIGIN

DEFINITION ACCESSION VERSION KEYWORDS SOURCE

RESULT 8

AR154677

ORGANISM

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Gaps

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BD261093
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KEYWORDS
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ACCESSION
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BD261093
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BD261226
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JOURNAL
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AL PATENT: JP 2002514397-A 41 21-MAY-2002;

CORY PHARMACEUTICALS GMBH, CORY PHARMACEUTICALS GROUP INC

OS Artificial Sequence

OS Artificial Sequence

PN JP 2002514397-A/41

PD 21-MAY-2002

PF 14-MAY-1999 JP 2000547969

PR 14-MAY-1999 US 60/085516,02-FEB-1999 US 09/241653 PI

HERMANN WAGENER, GRAVSON LIPPORD

PC CL2N15/09, AGIX31/70, AGIX39/39, C07H21/04//AGIX45/00, C12N15/00

CC Synthetic Sequence

Location/Qualifiers

FT SOURCE 1. .15

/organism=/Artificial sommonn/
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03-APR-1998 US 66/080729
ARTHUR M KRIEG, GEORGE WEINER
AGIK38/00, AGIK31/7088, AGIK39/00, AGIP15/00, AGIP35/00, AGIP37/04,
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JP 2002510644-A/5.
Synthetic construct
SM synthetic construct
other sequences; artificial sequences.

E 1 (bases 1 to 15)
S Krieg, A.M. and Weiner, G.
Methods and products for stimulating the immune system using immunotherapeutic oligonucleotides and cytokines
L PRINGING SEGRERARY FOUNDATION
OS Artificial Sequence
PN JP 2002510644-A/5
PD 09-APR-1099
PR 03-APR-1099
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/organism="synthetic construct"
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/organism="synthetic construct"
/mol_type="genomic DNA"
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'. 0; Mismatches
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Best Local Similarity 100.
Matches 15; Conservative
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BD261057
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09-APR-2002
02-APR-1999 JP 2000542030
03-APR-1998 US 60/080729
ARTHUR M KRIEG, GEORGE WEINER
AGIK38/00, AGIK31/7088, AGIK39/00, AGIP15/00, AGIP35/00, AGIP37/04,
AGIK3700,
PAT 17-JUL-2003
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E 1 (bases 1 to 15)
S. Krieg-A.M. and Weiner, G.
Methods and products for stimulating the immune system using immunotherapeutic oligonucleotides and cytokines immunotherapeutic oligonucleotides and cytokines
L. Patent: JP 2002510644-A 41 09-APR-2002,
UNIVERSITY OF IDWA RESEARCH FOUNDATION
OS Artificial Sequence
PN JP 2002510644-A/41
PD 09-APR-2002
PR 03-APR-1999 UP 2000542030
PR 03-APR-1999 US 60/080729
PR 03-APR-1990 US 60/080729
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E 1 (bases 1 to 15)
S Mccluskie,M.J. and Davis,H.L.
Mccluskie,M.J. and Davis,H.L.
Mccluskie,M.J. and Davis,H.L.
Datent: JP 200216294-A 5 04-JUN-2002;
LOBB HEALTH RESERRCH INSTITUTE AT THE OTTAWA HOSPITAL, CORY PHARMACEUTICALS GROUP INC
OS Artificial Sequence
PN JP 2002516294-A/5
PP 21-MXY-1999 US 60/086393
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/organism='Artificial Sequence'
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                                    Methods and products for stimulating the immune simmunotherapeutic oligonucleotides and cytokines.
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immunostimulatory synthetic oligonucleotide
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/organism="synthetic construct"
/mol_type="genomic DNA"
/do_xref="taxon:32630"
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MICHAEL J MCCLUSKIE, HEATHER L DAVIS
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BD261226.1 G1:33070996
JP 2002516294-A/5.
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synthetic construct
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JP 2002510644-A/41.
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Best Local Similarity 100.
Matches 15; Conservative
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BD270732.1 GI:33080500
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/organism='Artificial Sequence'
Location/Qualifiers
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    ^2rganism="synthetic construct"
|mol_type="genomic DNA"
|db_xref="taxon:32630"

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1 (bases 1 to 15)
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JP 2002521489-A/5
16-JUL-2002
27-JUL-1999 JP 2000562385
27-JUL-1999 US 60/094370
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BD267861
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1 (bases 1 to 15)
Gramainski, R.A., Krieg, A.M., Davis, H.L. and Hoffman, S.L. Methods for the prevention and treatment of parasitic infections and related diseases using CPG oligonucleotides Patent: JP 2002513763-A 14-MAY-2002; UNIVERSITY OF IOWA RESEARCH FOUNDATION, OTTAWA CIVIC LOEB RESEARCH INSTITUTE, UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY
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06-MAY-1998 US 60/084512
ROBERT A GRAMZINSKI, ARTHUR M KRIEG, HEATHER L DAVIS, STEPHEN L
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AG1P33/00//
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Methods for the prevention and treatment of parasitic infections
and related diseases using CPG oligonucleotides.
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/organism='Artificial Sequence'.

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Synthetic Sequence
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    forganism="synthetic construct"
/mol_type="genomic DNA"
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/organism="synthetic construct"
/mol_type="genomic DNA"
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JP 2002513763-A/4
14-MAY-2002
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JP 2002513763-A/4.
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Sequence 6 from patent US 6653292.
AR432429
AR432429.1 GI:40194764
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Sequence 66 from Patent WO0122972.
AXI03874
AXI03874.1 GI:13920071
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Davis, H.L., Schorr, J. and Krieg, A.M.
Use of nucleic acids containing unmethylated CpG dinucleotide as an adjuvant
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0; Indels
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/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
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Patent: US 6429199-A 5 06-AUG-2002;
Location/Qualifiers
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Sequence 5 from patent US 6406705.
AR213813
AR213813.1 GI:23311212
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Location/Qualifiers
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Sequence 5 from patent US 6429199.
AR222180. GI:23329645
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1 (bases 1 to 15)
Krieg, A.M. and Hartmann, G.
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Immunostimulatory nucleic acids
Batent: WO 0122972-A 66 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US); Coley Pharmaceutical
GmbH (DE)
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
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mol_type="unassigned DNA"
db_xref="taxon:32630"
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Patent: WO 0122990-A 63 05-APR-2001;
Coley Pharmaceutical Group, Inc. (US) ; UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
Location/Qualifiers
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Patent: WO 0122972-A 835 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
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Methods related to immunostimulatory nucleic acid-induced
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0; Indels
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Pred. No. 9.4e+02;
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100.0%; Pred. No. 9.4e+02;
tive 0; Mismatches 0;
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Sequence 815 from Patent WO0122972.
AX104643
/mol_type="unassigned DNA"
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Sequence 63 from Patent WO0122990.
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AX105164.1 GI:13921314
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Immunostimulatory nucleic acids
Patent: WO 0122972-A 783 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
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Patent: WO 0122972-A 766 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
                Krieg, A.M., Schetter, C. and Vollmer, J.C.
Immunostimulatory nucleic acids
Patent: WO 0122972-A 86 05-APR-2001;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US) ; Coley Pharmaceutical
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100.0%; Pred. No. 9.4e+02;
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/organism="synthetic construct"
/mol_type="unassigned DNA"
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Sequence 783 from Patent WO0122972.
AX104591
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AX104574
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Patent: EP 11673794 6 02-JAN-2002;
UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
Location/Qualifiers
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Patent: WO 0193902-A 29 13-DEC-2001;
Biosynexus Incorporated (US)
Location/Qualifiers
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Immunostimulatory rna/dna hybrid molecules
Patent: WO 0193902-A 95 13-DEC-2001;
Biosynexus Incorporated (US)
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
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Sequence 29 from Patent WO0193902.
AX351733
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Sequence 95 from Patent W00193902.
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AX342443.1 GI:18151886
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Patent: EP 116737-A 6 02-JAN-2002;
THE UNIVERSITY OF IOWA RESEARCH FOUNDATION (US)
Location/Qualifiers
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Patent: EP 1167379-A 6 02-JAN-2002;
UNIVERSITY OF 100A RESEARCH FOUNDATION (US)
Location/Qualifiers

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Sequence 6 from Patent EP1167377.
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Sequence 6 from Patent EP1167378.
AX342443
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Best Local Similarity 100.0%; Pred. No. 9.4e+02;
Matches 15; Conservative 0; Mismatches 0; Indels

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